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The Royal Economic Society

EDITED BY
R. F. HARROD
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E. A. G. ROBINSON

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MULTIPLIER ANALYSIS AND THE BALANCE OF PAYMENTS

PROFESSOR MEADE'S articles on Income, Expenditure and Balance of Payments in recent issues of the ECONOMIC JOURNAL (December 1948, p. 483, and March 1949, p. 17) are intended to show the application of the principle of the multiplier to the balance of payments. They suggest the raising of some very fundamental questions in regard to the use of multiplier analysis.

The conception of the multiplier has arisen from the mutual reactions of income and outlay. Income generates outlay, and outlay generates income. Consequently, any addition to outlay generates a further addition to outlay, this yet a further addition and so on, and an infinite series results.

If at each step the amount of outlay generated is *diminished*, the series may be convergent. In the particular case where it is diminished in an unvarying proportion, n, an original addition, x, will generate a total addition $x(1 + n + n^2 + \ldots)$ or $\frac{x}{1 - n}$; and $\frac{1}{1 - n}$ is then the multiplier.

(Outlay here means outlay *out of income*: the spending which effects disposals, that is to say, takes goods finally off the market, consumable goods for consumption and instrumental goods for use.)

It is unnecessary to assume that the same proportion, n, prevails throughout, or that the process goes by separate stages. The increase in outlay and income may be supposed to progress gradually, and to come to an end when the limit is reached. The ratio of the ultimate increase in outlay to the initial increase may still be called the multiplier.

Professor Meade's analysis is concerned with the case where a change in the balance of payments is involved. It is best illustrated by a transfer of spending, to an amount, x, per unit of time, from home-produced goods to imports (visible or invisible), without any initial change in outlay as a whole.

Producers encounter a diminution of disposals to the amount of x. They will reduce output, and, output being equal to income, the reduction of income will be followed by a reduction of outlay.

The reduction of outlay will be felt partly in reduced spending on imports and on exportable goods, partly in reduced disposals at home. The reduced disposals at home will give rise to a further reduction of output, of income and of outlay. In fact there will occur that mutual action of income and outlay which leads up to a multiplier. When the reduction in spending on imports and the increase in exports together amount to x, the adverse balance will have been eliminated. Income and outlay will be equal, and, if they have decreased by y, the multiplier is $\frac{y}{x}$.

The existence of a multiplier depends on the infinite series generated by the mutual action of income and outlay being *convergent*. Professor Meade deals with this aspect of the subject on pp. 492–5. "A rise in the national income, Y, will itself induce some increase in domestic expenditure, D_i, but not probably an exactly equivalent increase. Some part, λ, of the increased national income will leak away in the form of tax payments, increased savings and the like."

He divides the proportion, $1 - \lambda$, of the increment of income, which takes effect in outlay, into $C_1 + C_2$, representing consumption by individuals or by the State, and C_3, representing outlay on "capital development." A necessary condition of convergence is that $1 - \lambda$ must be less than unity. Professor Meade assumes quite legitimately that the increase or decrease in consumption will be less than in proportion to the increase or decrease in incomes, but about the portion, C_3, applied to capital outlay he is more doubtful. An increase in consumption stimulates investment at home and it is not certain that C_3 would not be so considerable as to make $1 - \lambda$ greater than unity.

That possibility he decides to disregard (p. 495). But has he not been misled by the ambiguities of the word "investment"? He has identified "the investment element, C_3," with outlay on "capital development" (p. 493). "The increased domestic activity may require some period during which new capital is installed." (P. 495.)

For his purpose "investment" must include the accumulation of stocks of goods, a process differing fundamentally in its causes and in its consequences, from the installation of new capital. Over the short period, within which the convergence or divergence of the series makes itself felt, an increment or decrement of stocks is one of the essential factors.

Consider first a closed system. Let an increase, x, in outlay occur. What will be the effect on income? A distinction has to be made between outlay on movable material products, of which stocks are held, and outlay on other products. The latter forms of outlay include not only outlay on consumable services, but also the greater part of capital outlay. Outlay on these generates equal and simultaneous income. Outlay on stock-held products, on the other hand, only generates income indirectly. Purchases from stock do not in themselves generate income. Only the orders subsequently given for the replenishment of stocks have that effect.

Any difference between income and outlay over an interval of time represents a change in traders' stocks. We may suppose the initial increment of outlay to be spent on all kinds of products. A part will be spent on stock-held products. With larger sales, traders will want to hold larger stocks; the orders they give to producers will therefore be more than equivalent to their sales. The increment of income generated will exceed the increment of outlay.

On the other hand, when this increment of income comes to be spent, the increment of outlay may be less than the increment of income. People with increased incomes will want increased cash holdings.

The process is not to be conceived as a succession of separate increments of income and outlay. It starts with an excess, x, of outlay, and a consequent excess of disposals and reduction of stocks by x per unit of time. Increased orders bring about an increase in production and therefore in income. The growing income is associated with growing outlay, and, so long as income falls short of outlay, production falls short of disposals, and stocks continue to diminish.

The outcome depends on monetary conditions. We may assume that a stage will be reached at which income has expanded so far that consumers need all their cash holdings for current purposes, and can no longer spend in excess of income. Any further enlargement of income will involve an excess of income over outlay in order to provide increased cash holdings. Thenceforward there will be a growth of stocks, equal to the excess of income over outlay, which will go towards making good the accrued deficiency of stocks. While any deficiency of stocks remains, orders for new production will tend to exceed sales, and income will continue to expand. The credit system, if it allows a sufficient supply of money to the *traders* for all operations which they undertake, will not interfere with the action of *consumers* in increasing or diminishing their cash holdings.

So long as expansion of outlay continues, even though outlay expands less than income, a further increase of stocks will be required, and only any surplus of production over what is needed for this further increase will be available towards making good the accrued deficiency. If the deficiency is never wiped out, the series is divergent. We may take as the test of convergence the restoration of traders' stocks to their due proportion to production and sales. As stocks approach that limit, the expansion of income will tail off, and we may assume that the need for increased cash holdings will cease to be felt.

Theoretically, however, that assumption might never be fulfilled. When traders' stocks reach their due proportion, consumers might still be increasing or decreasing their cash holdings, and when cash holdings reach their due proportion, traders might still be increasing or decreasing their stocks. An oscillatory movement between the two limits might go on indefinitely.

If the series is divergent, the growth of production will encounter a limit when productive capacity is reached, and, with the assumption that prices are not to rise, the limit of production will also be the limit of the expansion of income. Even a convergent series may be cut short by the limit of capacity, before its own limit is reached. Professor Meade seems to assume that capacity will not be reached. Perhaps his qualification that the increments are " small " (p. 491) is intended to secure this condition so long as the series is convergent.

Where the disturbance starts with a *decrement* of outlay, the series is bound ultimately to be convergent. Even if the production of stock-held products dwindled to nothing, there would still be some purchases from stock. Not only would consumers meet their needs from their cash holdings, but there would still be incomes derived from the rendering of consumable services, and from capital outlay. Eventually therefore stocks would be reduced below the appropriate proportion to sales, and production of stock-held products would recommence. That is, of course, an extreme assumption. We may suppose that a sufficient demand for stock-held products will be maintained to keep some production always in being.

The foregoing refers to a closed system. Professor Meade's analysis is concerned with an open system. We may revert to the supposition of a transfer of spending, x, from home-produced goods to imports, visible and invisible, without any initial change in outlay. There results a deficiency, x, of disposals at home, and an accumulation of stocks at the rate of x per unit of time. Production will contract, and income and outlay will shrink. With the shrinkage of outlay will be associated a diminution of the adverse balance.

But the fall in outlay will lag behind the fall in income, and there will be an excess of outlay over income. The rate of accumulation of stocks will be the difference between the adverse balance and the excess of outlay over income. The diminution of the adverse balance will eventually reduce this difference to nothing, so that the accumulation of stocks will cease; a continuing adverse balance will be paid for by an excess of outlay over income. But there will still be an excess of stocks due to the previous accumulations. Income and outlay will continue to shrink, and outlay will continue to exceed income. If there is to be any reduction of the excess of stocks there must be an excess of outlay not only over income but over income *plus* adverse balance. Ultimately, as in a closed system, the excess stocks will be used up, and the reduction of income will cease.

It is not certain that by that time the adverse balance will have been extinguished. There might still be an adverse balance, and an equal excess of outlay over income. Alternatively, the adverse balance might have been not merely extinguished but changed into a favourable balance, along with an equivalent excess of income over outlay.

Professor Meade's equations start with the assumption that income is equal to outlay. Otherwise it is not income but *outlay* that is equal to $D + T$. The equations, it may be said, represent a limiting case. And it is true that for a *closed* system the limiting case at which a multiplier emerges is reached when income and outlay become equal.

For an *open* system there is no definite limiting case. Stocks cease to vary when income is equal to disposals, D, and the difference between imports and exports (visible and invisible) is met by an equal difference between outlay and income. But that position cannot last; the difference between income and outlay is reflected in a cumulative change in consumers' cash holdings. So long as there is an adverse balance, the system will oscillate between the limit at which stocks are stable, but outlay exceeds income, and that at which outlay and income are equal, but stocks are accumulating. Even when the adverse balance is extinguished, there may be an existing difference between income and outlay to cause a renewed disequilibrium.

For an open system therefore there is no limiting case appropriate to the equations. The way to give them significance is to interpret Y to mean not income but *outlay*. Then the equation $Y = D + T$ becomes rigorously true, not merely in limiting cases but generally.

Professor Meade distinguishes L, foreign lending, from I, imports. But the distinction is an unnecessary complication. L and I will no doubt be different functions of Y. But the various components of L and the various components of I will likewise be different functions of Y. Professor Meade points out that his equations will be simplified if $L = 0$ (p. 504), and the same simplification is obtained by treating foreign lending as an invisible import, and aggregating it with I. That makes P equal to T, and $Y = D + P$.

Professor Meade's analysis is intended to show the effects of the three possible policies : neutral balance, external balance and internal balance. Of these, the last aims at stabilising income at the cost of a continuing adverse balance : " the authorities in A inflate their domestic expenditure in order to preserve A's national income and employment " (p. 18 note). That is to say, the decline in production of stock-held products is compensated by an increase of Government expenditure (on public works or other services). If there is to be no difference between income and outlay, the Government expenditure must be defrayed out of revenue (or at any rate without inflationary devices); the taxpayers' power of spending on stock-held products will be curtailed, and the accumulation of unsold stocks equal to the adverse balance will continue unabated.

That absurdity arises from the formula $Y = D + T$. And Professor Meade's use of the term " inflate " shows that he is not really contemplating it. He has in mind the case where the Government expenditure gives rise to an excess of outlay over income. If the accumulation of stocks is to be avoided, the excess of outlay must be at least equivalent to the adverse balance.

Let Y be outlay, and let Y' denote income. The policy of internal balance requires

$$Y' = D$$
$$Y - Y' = P$$

The policy of external balance requires

$$P = 0$$
$$Y = Y' = D$$

Neutral balance would require the same conditions as external balance, but may never be reached; for there is no certainty that P and $Y - Y'$ will ever both be zero together.

This indeterminateness, of course, results from the assumption that prices and rates of exchange remain unchanged. The equations themselves, with income and outlay distinguished, are of full generality. When prices are changing, suitable conventions are needed as to the meaning of income and production, but, subject to that condition, the equations remain valid.

The introduction of changing prices into the problem would open the way to the free operation of monetary policy and credit policy, which can be directed to any of the three kinds of balance. The assumption of unchanging prices is required to isolate the policies to which the multiplier analysis is deemed to be appropriate. Supposing the Government starts spending D_p, or excluding imports to the amount I_p, we ask what will be the ratio of the ultimate increase in income or outlay to D_p or I_p. If the price level changes, the comparison is vitiated, and we have to have recourse to a price index, which never possesses unconditional validity.

But does the unchanging price level really effect the desired isolation? It is itself a policy, to be realised either by an appropriate monetary policy or by price control. A monetary policy cannot at one and the same time aim at stabilisation of prices and choose between an external and an internal balance. The expansion or contraction of income required for the latter purpose can hardly fail to provoke a rise or fall of prices as a condition of an expansion or contraction of production.

The fixed price level must be secured by price control and wage control. But it cannot wholly eliminate monetary policy.

The fact is that D_i cannot be usefully expressed as a function of D_t or D_p at all. The relation between them at any time is determined principally by the state of stocks and cash holdings and credit policy. At a moment of time, when these are *given*, there is a function relating any hypothetical increment of outlay with the resulting induced increment. But at a subsequent moment the state of stocks and cash holdings will have changed, and a *different* function will hold.

Nor can this changing function be suitably expressed at any stage by a simple multiplier or coefficient. When an increment of outlay sets up the mutual reactions of income and outlay, so that the increases in each induce increases in the other, the original disturbance may be said to be "multiplied." That is merely another way of saying that the effect is cumulative.

It is the function of credit policy to induce either an absorption of cash into balances or a release of cash from balances, in the one case an excess of income over outlay, in the other an excess of outlay over income. The reliance on controls to maintain prices unchanging leaves credit policy in this sense indeterminate.

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THE PRESENT POSITION OF THE COAL INDUSTRY IN GREAT BRITAIN [1]

ALL discussion of the present position of the coal industry is necessarily dominated by the fact that it has now been nationalised. It may no longer suffice therefore to assess its performance by those standards which are ordinarily applied to private-enterprise industry. But we cannot be too certain of this. Amongst the protagonists of nationalisation it was possible to discern roughly two schools of thought—which we may conveniently describe as liberal and socialist respectively. To the former the case for nationalisation was simply the need for administrative unification, and, since a complete private monopoly of an important basic industry was not to be contemplated (and State financial assistance might be necessary to effect large-scale technical reorganisation), this was seen to involve State ownership and control of the assets. To the latter, nationalisation was a socialist measure designed to eliminate private profit, to secure the working of the industry in the light of " social needs," to satisfy the aspirations of the work-people to a voice in their own destiny and so on. It follows that what would appear to be valid judgments of performance to the former might lack significance to the latter and vice versa.

My own feeling is that the industry should be judged in the light of what is now expected of it, if this can be ascertained with reasonable certainty. This will involve consideration of the motives of the majority political party which gave effect to nationalisation. These motives were probably very mixed, and it would perhaps be unwise, in this connection, to attach too much importance to the distinction made above. But it would seem reasonable, nevertheless, to expect to find the socialist *motif* predominating, and that this would be borne out by careful study of the Coal Mines Nationalisation Act (1946). The Act gives us very little guidance however—indeed, it appears to look both ways at once. The National Coal Board (N.C.B.) is charged with securing the efficient development of the coal-mining industry, and making supplies of coal available in such quantities and at such prices as may seem to them best calculated to further the public interest in all respects.[1] Everything turns on what is meant by " efficient " and " the public interest "—an issue which I do not intend to debate. It is sufficient to say that " efficiency " is a concept familiar to economists brought up on the economics of private enterprise and to which a fairly precise meaning can be attached. " The public interest " is a vague and unfamiliar concept, but one to which socialist advocates of nationalisation rightly attach a great deal of significance. Either may be the appropriate criterion by which the industry should be judged, but it is difficult to see how they both can be. It may very well happen that the N.C.B.'s notions of efficient development will conflict with the Minister's view of the public interest.[2] To put the matter bluntly, is the Board to be judged by efficiency standards appropriate to private enterprise or by the extent to which its policy conforms to the public interest? The former approach has the advantage that it permits the forming of objective judgments; the latter has the advantage that it is more in keeping with the case established for nationalisation by the Labour Party. The Act invites us to take our choice.

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[1] This article is a slightly modified version of a paper read to Section F of the British Association at Newcastle on September 5, 1949.

To take a further point from the Act itself. The Board is directed that its outgoings must be covered by its revenue taking an average of good and bad years.[3] From what I have called the liberal point of view this is sound business sense, but from the socialist point of view it is surely nonsense. This, to say the least of it, increases our doubts about the angle from which we should view the performance of the industry.

The Coal Board is thus left in some doubt as to its fundamental objectives. " Efficiency," the " public interest " and " balancing one's budget " are difficult horses to run in triple harness. But even with a clear objective the Board is denied sufficient autonomy to achieve it. The Minister may give the Board directions in relation to matters which appear to him to affect the national interest. How much use has been, or will be, made of this we do not know, but there can be no doubt as to its potentialities. We do know that the five-day week agreement was signed by the N.C.B. on the specific authorisation of the Government[4] and that reorganisation schemes involving substantial capital outlay require the Minister's approval.[5] Moreover, price policy is not within the sole control of the Board, and the industry is, at present, expected to work to an output target set by the Government. How all this is to be reconciled with the supposed autonomy of the Board and its obligation to balance its budget I do not profess to know. I have no particular quarrel with most of these things taken singly. If what I have called the Socialist approach is adopted, it is quite proper that various social factors should be weighed before a course of action is decided upon, and perhaps a Minister of the Crown is the best person to do the weighing. But suppose the Board decides that the only way to avoid a loss or to recoup past losses is to close 100 pits [1] and the Minister decides that the resulting loss of output, unemployment and social dislocation is contrary to the national interest and issues a direction to this effect—how then is the Board to carry out its statutory obligation? The Minister may or may not deny the Board the alternative remedy of raising the price of coal—a remedy almost certain to be effective only because of the marked inelasticity of home demand for coal, but which makes even greater nonsense of the Board's obligation to balance its budget! [2]

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[1] Section I(1).

[2] The Minister is final judge as to what constitutes the national interest—see below.

[3] Section I(4)(c).

[4] Annual Report of the National Coal Board for 1947, para. 53.

[5] Coal Mines Nationalisation Act, Section 3(2).

With all this in mind it is instructive to review the capital reorganisation programme of the Board. Somehow the Board must decide (prior to submitting the plan to the Minister) whether or not to proceed with reorganisation schemes in this or that place. Broadly speaking, the Board would appear to have two alternatives. (i) They can adopt only those schemes which, within the limit of their investment resources, are likely to show the greatest return after taking account of all directly relevant factors—the level of mining costs, the expected level of demand, the quality of the coal, availability of labour and proximity to markets. The onus of rejecting these schemes on general social grounds would then be placed on the Minister. If this approach were adopted one would expect (so far as the N.C.B. is concerned) that large new mining projects would be mainly centred in the Midland coal-fields. *To what extent* this would happen it is impossible to say, since it is easy to underestimate certain concrete advantages possessed by the older and poorer coal-fields, *e.g.*, the availability of labour in these areas, the geographical advantages of Lancashire in its local market, the possession of high-quality special coals by Durham and South Wales, and the excellent reconstruction possibilities of small areas in the older coal-fields (*e.g.*, Rhymney area in South Wales), which are not representative of the whole. But nevertheless one would expect a pronounced shift in the location of the industry. (ii) Alternatively the Board could take account of social costs and revenues, which would probably mean, since no precise assessment of them is possible, that they would be dominant. In practice, this would probably mean that reconstruction schemes would be so framed and located as to preserve something like the present balance of production between coal-fields.

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[1] In 1948 some eighty collieries producing 4 million tons of coal made an aggregate loss of £5½ million. *Annual Report of the N.C.B. for* 1948, para. 374.

[2] Attention may be called at this point to the futility of applying the ordinary economic analysis of the firm to a case such as this—especially when the activity concerned is that of mining a wasting asset under extremely variable cost conditions which are quite unrelated to the quality and market price of the product.

Until a comparatively short time ago the Board seemed quite unable to make up its mind on this vital matter. Some references in their Report for 1947 suggested the second approach noted above. It is stated, for example, that some large new mines will be required in the South-western Division during the next few years (para. 507), that there is no need for new pits in the East Midlands for at least five years (para. 505) and that the Board must have regard to social costs which may be caused by the contraction of output in any coal-field (para. 524). On the other hand, para. 498 [1] definitely suggests the first approach, except for the ambiguity of the phrase "and many other factors," which might of course include social factors. Also there were signs of search for a compromise in spite of the difficulties of achieving reasonable compromise between the commensurable and the incommensurable. Thus, for example, Mr. E. H. Browne appeared to suggest at the Oxford Summer School of 1948 that minimum tonnages be set for each coal-field within which capital projects would be considered on their divisional merits. Presumably, a proportion of total capital authorisations would be allocated proportionately between the coal-fields; the money being spent on the most profitable projects to be found in each division. Over and above this, authorisations would be made for projects considered on their national merits, and the divisions concerned would be allowed to produce above their minimum tonnages.

It is interesting to see what has happened in practice. Let us say that a division which has the same share of total authorisations for major capital schemes as it has of national output is enjoying its "fair share." The Northern and South-western Divisions have an O.M.S.[1] well below the national average and show heavy losses per ton. The former received 14% less than its fair share, and the latter 7% more. The North-west was receiving 18% more than its fair share, although both O.M.S. and profits per ton were well below the national average. The East and West Midlands show profits per ton and O.M.S. well above the national average, but the former received only 4% above and the latter 6% below its fair share of capital authorisations. The figures are therefore somewhat inconclusive, though they do suggest a surprising predilection for large-scale reconstruction projects in the older and so-called declining coal-fields. Too much should not, however, be read into this sort of calculation in view of the shortness of the period (January 1947–December 1948), the variability of conditions within coal-fields, and the fact that the Board found itself half-committed to some of these projects when it took over the industry.

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[1] "The Board's planning staff . . . will examine projected schemes in the light of the probable future demand for coal, the cost of production in the different coalfields, the availability of labour and many other factors."

The 1948 Report of the N.C.B. makes somewhat clearer the approach of the Board to reorganisation policy. It appears to have come down fairly decisively in favour of meeting demand at the lowest possible cost, and places less stress on the social imponderables involved. The basic factors of the national plan for future development which it is drawing up would appear to be somewhat as follows. An attempt is being made to forecast the demand for coal of each main grade on certain assumptions about future prices. These estimates will then be related to estimates from different coal-fields of supplies of different categories of coal which should be forthcoming at different levels of cost. The latter estimates will presumably rest on an implicit assumption that there will be complete freedom to implement reorganisation schemes. Divisional output objectives relating demand to supply will then be set, and such capital authorisations made as should permit their achievement.

Admittedly this is still vague enough and begs more questions than it answers. I will permit myself only two brief comments. (i) Since demand in the home market (where the bulk of output is sold) is inelastic, the emphasis must be clearly placed on meeting demand at lowest cost, and not at the relevant demand price. The Board must rid itself of the notion that its reorganisation plans should be based on the avoidance of profits or losses.[2] Profits should be planned for, and if realised can be subsequently dissipated by meeting past deficits or by concessions to consumers and work-people. On any other basis, rational planning is impossible. (ii) Until there is some agreement on a new wages structure it is difficult to see how even tentative supply estimates can be made. As it stands the plan implies basing future production on maximum economy of direct costs to the Board (including transport costs). This will probably mean a shift in the present balance of production between coal-fields, and the onus will be on the Minister to accept or reject this. If, for example, the National Union of Mineworkers succeeded in its claim for equalisation of earnings between coal-fields without modification of wage-rates in high-wage areas, then clearly the shift in production predicated by the plan will be all the greater, whilst the incentive of labour to move will be weakened. Also, planning on the lines indicated will be quite impossible until it is known what modification of price lists will be accepted by the men as pits are reorganised and new methods of working introduced.

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[1] Output per man-shift.

[2] See, for example, *Annual Report of the N.C.B. for* 1947, para. 523.

I hope I shall not be thought too critical of the Board for their somewhat woolly and inconsistent approach to reorganisation. I have tried to make clear my opinion that they have been given an impossible task—that their terms of reference are too vague and their powers inadequate. The position might be improved if the Minister gave the N.C.B. a specific output target for home consumption and exports. The former more or less fixes itself, and the latter could be decided in the light of considerations beyond the purview of the Board. The Board would be responsible for hitting these targets at minimum direct cost to itself, and prices would be fixed by the Board, to cover their costs. In so far as the Minister subsequently interferes with the Board's plans on the grounds of national interest, the Board would seek specific authorisation to raise prices to meet additional cost. The public would then know the money value being set on "social costs" and could judge for themselves the wisdom of the Minister's action.[1]

I have left myself little time in which to discuss other aspects of the coal situation. For the sake of completeness I propose to summarise with little discussion the more important features to which I think attention should be directed.

1. *Organisation.* When the industry was nationalised many people doubted whether such a large organisation could be set up without incurring considerable diseconomies on the management side. I think it is too soon yet to express any final judgment

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[1] A further refinement might be for the Board to estimate and report on the extent to which (if any) the home consumer was subsidising export sales in order to hit the export target.

on this issue. The Burrows Committee bears witness to the fact that there have been teething troubles enough. On the other hand, there can be no doubt that the Board has considerably modified and improved its organisation since 1947—especially at area level.

2. *Industrial Relations.* Any expectation that nationalisation would inaugurate a new era in industrial relations has rapidly been disappointed. The reasons for this are too complex to be discussed here, but two matters are so frequently overlooked in this connection as to justify comment. First, the men are rarely approached with a real understanding of their point of view. They are upbraided in particular for not taking advantage of their present opportunities for raising productivity per man. If men are told (as they have been) that the national objective is 30 cwt. per man-shift we must expect them to multiply this by (say) 250 man-shifts per year and by (say) 720,000 men and arrive at an answer of 270 million tons per annum. The men's fears are obvious and their reactions understandable. The Coal Board may have an answer (and there are obvious adjustments to be made to such crude calculations) but if so, we have not yet heard it given. Secondly, the wages structure of the industry is antiquated, anomalous and often unintelligible. The Coal Board now admit that it is not conducive to economy or efficiency,[1] and they might have added that it is a most prolific cause of friction within the industry. Both the Coal Board and the N.U.M. are understandably reluctant to tackle this urgent but thorny problem. The Minister of Fuel might seriously consider the appointment of a special committee for this purpose.

3. *Price Policy.* For the Coal Board this is not so much a matter of the absolute level of coal prices, but of establishing a proper relationship between the prices of different grades. There are two fundamental problems involved here. The first is that of grading coal. This is an immensely complicated and technical matter, since the worth of coal to the consumer depends not only on calorific value but also on many other qualities. The second is that equivalent grades of coal are mined at different places at different levels of cost. The Board may wish to reduce the price of certain coals, the output of which can be increased at low cost, and this may result in coal being offered at a price below that of a higher-ranking coal. The price structure having been established, the Board has still to decide whether to offer coal of a particular grade at a uniform pithead price, a differential pithead

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[1] *Annual Report of the N.C.B. for* 1948, para. 364.

price according to its cost of production or a uniform delivered price. Little progress has yet been made in settling these problems. Certain anomalies resulting from flat-rate increases in the price of coal during the war have been corrected, and the Board has tentatively decided in favour of uniform delivered prices within specified areas or zones. Apart from this, the whole subject is still in the melting pot. It bristles with fascinating problems for the economist, but has not yet attracted the attention it deserves —even from those of my colleagues who write learned articles on the price policy of nationalised industries !

One last word on the future of the industry—a future about which it is difficult to be optimistic unless present policies are changed. Consider first the level of demand. Assuming continued full employment and relaxation of domestic fuel restrictions, home demand can hardly be put above 205 million tons, and this is not likely to be affected by moderate price movements. Bunker and export demand, however, *will* be much affected by future prices and the availability of supplies abroad. Future world supplies are likely to be more than adequate to meet world demand. Excluding Russia and the Soviet Zone of Germany, world coal and lignite production in 1948 was about 5% and 14% respectively above the 1937 level. It is true that the long-term trend of world demand is probably upward,[1] that Russia (probably a deficit area) has to be taken into account, that the U.S.A., which has contributed so much to the increased production, is herself consuming a large part of the increase, and that an overall sufficiency of coal is quite compatible with marked shortages of particular grades. But on the other hand, the scope for further increase in European production is considerable, the abnormal post-war reconstruction demands will soon be falling away, and the high price of coal will lead to more efficient utilisation of solid fuel. All in all, it seems fairly certain that coal will soon be difficult to dispose of in overseas markets. The export price of South Wales Steam Coal in 1948 was 334% above 1938,[2] and it is generally admitted that certain grades of coal are becoming difficult to sell abroad at present prices. Our European competitors with an O.M.S. well below pre-war are certain to have more scope for price reductions than ourselves in the near future.

On the supply side we are committed under the Marshall Plan to a coal target of 230 million tons of deep-mined coal in 1951, and the British Memorandum to O.E.E.C. gives a target of 240 million tons (deep-mined) for 1952–53.[1] Taking account of open-cast supplies, this suggests exports (including foreign bunkers) of over 40 million tons by 1952. At the present rate of expansion these output targets should be achieved. Assuming a labour force of 730,000 (*i.e.*, 3,500 above the March 1949 figure) and no decline in the number of shifts worked, an O.M.S. of 1·3 tons overall (compared with 1·17 in March 1949) will enable the objective to be reached.

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[1] Due for example to the industrialisation of backward areas, full employment practices, and the increase in world population.

[2] R. G. D. Allen, ECONOMIC JOURNAL, June 1949, page 143.

But we can hope to sell the export surplus, assuming that home consumers are not asked to bear increased prices in order to subsidise export sales, that they will be allowed to share in the modest cost reduction which should follow an increase in O.M.S., and the Coal Board profits are maintained at present levels to meet the 1947 deficit ?[2] Everything will then turn on the cost reduction which the Board can achieve. Wage costs per ton are the most important factor here, and prophesy is perhaps unwise. In their Cadman Lecture to the Royal Society of Arts, Sir Charles and Dr. William Reid estimated a reduction of 7*s.* per ton in wage costs by 1965 assuming that O.M.S. had reached 30 cwt. and present wage-rates were maintained. Taking account of other cost items including additional capital costs, the net reduction in coal-production costs was estimated at 5*s.* per ton. Over the period up to 1952 the scope for cost reduction would be much less—assuming always that there are no general cuts in wages. Even so, the Reid calculation appears to be optimistic. It suggests an increase in earnings of only 1*s.* 10*d.* per shift following an increase in O.M.S. of nearly 40%. This implies a very generous attitude on the part of the miners to the modification of price lists as reorganisation proceeds.

Two tentative conclusions may be drawn from this. (i) If these output targets are achieved it will be difficult or even impossible to sell the coal—granted my assumptions. This is a situation which can be met only by unemployment, wage cutting or further losses for the Coal Board, which may, however, be mitigated by raising inland prices. (ii) If the target is not reached it will mean *either* that the reorganisation programme will have failed to raise productivity per man *or* that productivity has risen as expected, but that labour has become redundant. This puts the dilemma of the Coal Board in a nutshell. All the emphasis nowadays is placed on output expansion to meet balance-of-payment difficulties and to exploit a temporarily favourable

[1] Cmd. 7572, para. 83.

[2] This will take approximately fourteen years.

market situation. When output becomes unsaleable the adjustment may need to be severe. Reconstruction projects which are adding to the capacity of the industry will have to be continued on grounds of economy. The sacrifice will have to be made by the old pits and old centres of the industry, and this may well result in severe local social dislocation and unemployment. The Board will be well advised to trim its sails before the coming storm. The prescription is clear. The Board should press the Government for lower output targets, be more active in eliminating uneconomic mines and should set about reducing its labour force. The pace of present output expansion would slacken, but O.M.S. would rise more sharply and costs and prices would start to come down. At the price of adding a little to our present difficulties the process of readjustment would be spread more evenly over time, and the Board would be better prepared to meet normal competitive trading conditions.

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IMPORT-REPLACEMENT BY BRITISH AGRICULTURE[1]

In view of the greatly increased part which the State has come to play during the past decade, and which, presumably, it will continue to play in the future in influencing and directing the lines of development of British agriculture, it is clearly desirable to find objective standards by which to assess the value to the national economy of particular kinds and conditions of farming enterprises. Because of the different purposes which agriculture has to serve, it is, of course, impossible to apply any single standard of assessment. Certain products, particularly milk, are primarily of importance because of their unique nutritional value, others, such as main-crop potatoes and meat, because they provide essential items in the national diet which cannot be obtained from abroad or of which world supplies are short and likely to remain so. But perhaps one of the most important functions which British agriculture is called upon to perform, in present circumstances, is that of assisting in the correction of our adverse balance of payments by reducing our dependence on imported foods, particularly those from hard-currency sources. This was the main objective of the ambitious four-year programme of expansion of agriculture launched by the Government in the late summer of 1947; and the recent worsening of our dollar position has, presumably, given added importance to the achievement of that objective.

Apart from the special nutritional and dietary considerations mentioned above, it should, logically, be the aim, within this overall expansion programme, to give most encouragement to those types of production, and those types of farms which make the greatest contributions to the saving of food and feeding-stuffs imports. It is true that the process of reducing dollar imports of commodities has now gone so far that apart from comparatively small quantities of bacon and cheese from Canada and of sugar from the Caribbean, the only food for which we are now paying a substantial amount of dollars is wheat. Superficially, this might lead to the conclusion that the maximum effort of British agriculture should be concentrated on wheat production. And, in so far as, in present circumstances, our main concern is to effect further dollar-savings, this conclusion would appear to be justified. In fact, present agricultural policy seems to be based on this assumption. But, apart from actual dollar imports, it is still necessary to buy large quantities of meat and coarse grains from countries such as Argentina and U.S.S.R. which require highly valuable exports in exchange; from the point of view of making the best use of exportable goods it seems, therefore, still necessary that our own agricultural effort should be concentrated in those directions which will result in the greatest savings even in non-dollar imports.

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[1] The devaluation of the pound sterling was announced at the time that this article was being prepared for the Press. Clearly the import prices of various commodities in terms of sterling are likely to be considerably affected by this measure. The immediate effect was to cause an increase of 20% in the price of Canadian wheat, and to that extent the import-saving capacity of crop-selling farms has been raised relatively to that of other types of farms. It is, however, obviously impossible as yet to forecast the ultimate effects on the price-relationships of different imported foods and raw materials used in agricultural production, and no modification of the figures used in this article has, therefore, been made on this account.

Moreover, the present limitation of the range and quantity of dollar food and feed imports has been achieved only by severe restrictions on food consumption, and it is presumably now the aim of agricultural policy to assist in the improvement of the national diet by replacing as much as possible of these lost imports.

In view of all this, a suitable objective standard of measurement of the relative value of different types of production and different kinds of farms appears to be provided by the cost, in terms of import prices, of the commodities which they produce. Indeed, apart from nutritional standards, which raise an entirely different question, it is difficult to see what other criterion can be adopted. For, clearly, the actual selling prices of British agricultural produce, under the present fixed-price regime, are too "subjective" to be a reliable guide for the purpose in view.

In assessing the relative values of different kinds of farms and types of production from the point of view of import replacement, however, it is clearly not sufficient to take account merely of their output (in terms of import-values) from a given area of land. It is necessary also to measure the amounts of indigenous resources, such as labour and other resources, which are used in the process of production, and which might conceivably be applied to greater advantage in some other sector of the national economy.

Material for an inquiry into the import-saving potentialities of different types of farms, operating under normal "commercial" conditions, exists in the considerable volume of financial and economic data collected from large numbers of farms under the Farm Management Survey, which has been carried out over a considerable period at various Universities by the Provincial Agricultural Economists, on behalf of the Ministry of Agriculture. The objective of this paper is to set out some conclusions on this question which appear to emerge from data collected under this Survey in six counties in the South and South Midlands of England[1] for which the University of Reading has been responsible.

As has been indicated above, other important considerations, besides that of the balance of payments—in particular, questions of nutrition and diet—must, obviously, enter into the framing of agricultural policy. Such questions, however, are outside the scope of this investigation. All that it is sought to do here is to present some of the data which may assist in forming a judgment as to how far different kinds of farms are helping to solve the balance-of-payments problem.

I. METHOD OF INVESTIGATION

The gross annual replacement of imports by each type of farm in the tables which follow has been arrived at by taking, for each farm, the sales during the year of each main product, adding or subtracting increases or reductions in stocks, and, in the case of livestock, subtracting purchases of similar stock, and evaluating the resulting figures in terms of prices of imports. From these figures are deducted the value, in terms of import equivalent, of any commodities purchased which embody substantial amounts of imported materials, the resultant figure indicating the net import replacement.

In order to eliminate, as far as possible, the effects of year-to-year variations in yield, as well as to increase the size of the sample, the calculations are based on data covering the four years ending March 31, 1946, 1947, 1948 and 1949. For some farms data are available for all four years, for others for only one year or two years. Where more than one year's results are available, each year's results are regarded as a separate case for the purposes of this investigation. This, it is realised, somewhat weakens the value of the sample, but avoids the serious reduction in the size of sample which would have followed if the investigation had been confined to farms for which results were available over the whole period.

There is no difficulty in assessing the value, in terms of imports, of commodities of kinds which themselves (or their end-products) are imported on a substantial scale, *e.g.*, coarse grains, sugar-beet. fat livestock, eggs. Products such as milk and main-crop potatoes, which are not imported in appreciable quantities, present more difficulty. An increase or decrease in the output of such commodities in this country would clearly affect imports of food in one form or another, but it is by no means easy to assess in each case what the effect on imports would be. In the case of potatoes, which are primarily an energy-producing food, the effect of a change in the volume of home production would probably be felt mainly in the form of increased or reduced consumption of bread or other flour products and, in the figures which follow, potatoes have been valued in terms of the equivalent quantity of imported wheat. Milk is more difficult. Liquid milk is not imported, and there is little likelihood of any appreciable imports of that commodity in the immediate future. From the point of view of the effect of changes in milk production on food imports, therefore, milk can be assessed only in terms of imported milk products, *e.g.*, cheese or condensed milk. It is appreciated that such a basis of assessment ignores the special nutritional and æsthetic value of milk consumed in liquid form. This, however, as has already been pointed out, is a question outside the scope of this investigation. A more relevant question is whether cheese or condensed-milk prices should be taken as the basis of assessment. The point is one of considerable importance, since, in terms of import prices, a gallon of milk in the form of condensed milk is worth almost twice as much as in the form of cheese. It can be argued on the one hand that condensed milk should be the basis of assessment, since the diversion of land from milk to other forms of production would probably involve the replacement of the liquid milk lost by the nearest imported equivalent obtainable, *i.e.*, condensed milk. This, however, is only partly true, because the reduction in milk supplies, in so far as it fell in the summer months, would no doubt fall partly upon manufactured milk products, particularly cheese. What is perhaps more important is that, in present circumstances, *reduction* in milk production can probably be regarded as outside the sphere of practical politics. From the practical point of view the question is, rather, that of the direction which *increased* agricultural output should take—milk, meat, cereals, etc. From this point of view, although increased milk production, if it were desired to devote it to the purpose of import saving, might to some extent be used to save relatively high-priced imports of condensed milk rather than cheese, the extent to which this could be done is, in practice, extremely limited. The total quantity of our imports of condensed and dried whole milk in 1948 did not represent the equivalent of 2% of our total milk production, so that the possibilities of saving in this direction would soon be exhausted.

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[1] Hampshire, Berkshire, Buckinghamshire, Oxfordshire, Warwickshire and Northamptonshire.

In practice, any considerable increase in milk production—in so far as it was used to save imports—would almost certainly save cheese imports, and imported cheese has therefore been adopted as the basis of assessment in the figures which follow. Nevertheless, the much greater import value which milk would assume, if the question of replacement of milk by other products in our farm output ever arose, must not be overlooked.

Somewhat similar difficulties arise in assessing the value, in terms of imports, of materials purchased by farmers. The appropriate import value of such items as concentrated feeding-stuffs, phosphatic and potassic fertilisers and tractor fuel—all, or a substantial proportion of which, or of their basic raw materials, are imported—can be fairly readily estimated. Even where the actual material purchased may itself be home produced, *e.g.*, wheat offals or home-grown feeding-barley, as our marginal supplies are imported, the consumption of the home product by one farm involves a corresponding addition to the total amount of similar produce imported. In some cases, however, *e.g.*, many farm seeds, or some kinds of store livestock, there are no similar imports. The purchase of such commodities by farmers, however, represents the utilisation of the produce of a certain area of land on other farms which would otherwise be available to produce import-saving foods. It is, therefore, justifiable to regard such commodities as costing foreign exchange to the value of the nearest equivalent imported produce. Other commodities, *e.g.*, coal, though not imported, are readily exportable, and their consumption at home deprives us of foreign exchange which could otherwise be earned : it therefore seems reasonable to charge agriculture with the export value of such materials.

There is, on the expenses side of a farm's accounts, a wide variety of goods and services which do not in themselves involve expenditure on imports at all or only to a comparatively trivial extent or very indirectly. These include, for example, certain home-produced fertilisers (particularly nitrogenous fertilisers), labour, repairs to machinery and implements and a wide range of miscellaneous expenditure such as telephone charges, accountancy fees, veterinary charges, insurance, etc. Although these factors of production are by no means completely mobile (particularly in the case of family labour) a considerable part of these resources could be used for other purposes if they were not absorbed by agriculture, and would thus save imports or increase exports in other directions. It would obviously be impracticable to attempt to measure the exchange-saving or earning value of these resources if devoted to other uses. It is, however, an essential part of this exercise to indicate the amounts (in terms of the prices actually paid for them) of these indigenous resources used by farms of different kinds in relation to the net value of imports replaced.

The import prices adopted for the purpose of this investigation were the average declared values of imports from all sources prevailing in the first half of 1949 according to the Trade and Navigation Accounts. It is assumed that these values are related to the prices paid for the various commodities by the Ministry of Food, who are the purchasers of all agricultural commodities of major importance. It is appreciated that the declared values of imports include costs incidental to importation, particularly freight. An important part of these costs, however, and in particular, freight costs, represents U.K. resources which could otherwise be used for earning foreign currency and, in so far as they represent services performed by overseas agencies (*e.g.*, foreign shipping) they represent actual foreign-currency expenditure.

It can, of course, be argued that the value of imports replaced by home production should be calculated on the basis, not of imports from all sources, but of the most expensive, or possibly, the hardest-currency imports, on the assumption that these supplies would be the first to be cut off as home production increased. There is some force in this argument. It cannot, however, be assumed that in practice political and other considerations would necessarily permit such a basis of choice to operate freely, nor, in view of recent changes in prices of imports and in the relative hardness of different currencies, can it be assumed that the supplies which are currently most expensive or the currencies which are at present hardest will necessarily remain so permanently. It has, therefore, been considered preferable, on balance, to work on the basis of the average declared value of all imported supplies. Similar considerations apply to the cost of imported goods purchased by farmers.

Important movements have recently been taking place in the prices of food imports, and as is pointed out later (p. 30) neither the general price-level during the first half of 1949 nor the relationships between different commodity prices at that time can necessarily be regarded as "normal." The effects of given changes in actual and relative prices are therefore examined in this paper.

In the investigation which forms the subject of this paper three main questions have been considered : (i) the relative advantage, from the point of view of import-replacement, of different types of agricultural production; (ii) the performance of farms of different sizes; (iii) the effects of increasing the intensity of production. All these questions have an important bearing on agricultural policy.

II. Replacement of Imports by Different Types of Production

The farms which have provided the data for this investigation are situated in an area which is, for the most part, one of fairly uniform geographical conditions. Variations in climate and altitude are relatively small; and, although there is a wide range of soil types—including, for example, the thin, chalky soils of the Hampshire and Berkshire Downs, the dry limestones of Oxfordshire, the alluvial soils of the Thames Valley and the heavy clays of Warwickshire and Northamptonshire—conditions generally are not such as to lead to marked regional specialisation in farming types or to prevent wide diversity of production in all parts of the area. It is true that there are certain restricted regions where one type of production tends to be more concentrated than in the area as a whole, *e.g.*, cattle grazing on the pastures of Northamptonshire and Warwickshire, or cereal production on the Hampshire and Berkshire downland farms. But most of the farms in the area produce more than one commodity for sale in substantial quantities, and as war-time experience showed, there are, in general, no insuperable natural obstacles to considerable changes in the pattern of production on particular farms. In these circumstances it is justifiable to assume that differences in results between farms of various types do not in the main reflect differences in environment.

It is typical of British agriculture as a whole, and not only of farming in this area, that most farms practise composite systems leading to the production of a variety of commodities in varying proportions. It is, therefore, difficult, if not impossible, to make comparisons, under practical farming conditions in this country, of the value of single commodities from the point of view of import replacement. It is, rather, a question of comparing different farming types in which different commodities more or less predominate. Four main types of farms can be distinguished in the area in question: (i) dairy farms on which the main product is milk, (ii) farms concentrating mainly on the production of crops for sale; (iii) farms producing mainly livestock or livestock products other than milk; (iv) mixed farms on which no single commodity predominates.[1] For the purpose of examining the effects on import-saving of different production-types, this classification is adopted in this section of this paper, the criterion for inclusion in groups (i), (ii) and (iii) being that more than 50% of the total income of the farm is derived from milk, sale-crops or livestock products other than milk respectively, group (iv) comprising the remaining farms, where none of these products provides more than 50% of total income.

The average results achieved by the whole sample of farms for which figures are available—amounting to 748 farm-years[2] in all are given in Table 1 for each of the years under review and for the period as a whole.

TABLE 1

Replacement of Imports and Utilisation of Home Resources by Farms in the South of England, 1945/6 *to* 1948/9

	1945/6.	1946/7.	1947/8.	1948/9.	Average.
Gross replacement of imports (£ per acre) . . .	13·8	12·8	11·6	13·4	12·9
Imported materials used (£ per acre)	3·3	3·7	3·7	4·3	3·7
Net replacement of imports (£ per acre) . . .	10·5	9·1	7·9	9·1	9·2
Home resources used:					
Labour (£ per acre) . .	6·8	6·6	6·4	6·8	6·7
Other home resources (£ per acre)	4·3	4·2	4·8	5·1	4·6
Total home resources (£ per acre)	11·1	10·8	11·2	11·9	11·3
Home resources used per £100 net replacement of imports:					
Land (acres) . . .	9·5	11·0	12·8	10·9	10·9
Labour (£) . . .	65	73	82	74	73
Other home resources (£) .	41	46	61	56	50
Total home resources (£) .	106	119	143	130	123
Number of farm returns in sample (actual) . .	152	184	215	197	748
Average area per farm (acres)	261	242	277	234	259

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[1] In certain parts of the region, market-gardening is also important, but this specialised industry is not taken into consideration in this article.

[2] For this purpose a farm-year means the results for a single farm in a single year; as has been indicated a considerable number of the farm-years included in the figures represent the results for the same farms in more than one year.

It cannot, of course, be assumed that these figures are fully representative of the average performance of farms in the area, but they probably give a sufficiently close approximation to the general order of magnitude of import replacement at the January–June 1949 prices.

A steady decline can be seen over the first three years in the gross saleable output, valued in terms of imports, followed by a recovery in the fourth year. This was mainly the result of varying climatic conditions. The year 1946/7 was affected by the abnormally wet harvest of 1946, while 1947/8 suffered both from the after-effects of the record cold winter of 1946/7 and from the summer drought of 1947. 1948/9 was a comparatively good season, particularly as regards crop yields.

The consumption of materials involving imports has risen somewhat over the four-year period, mainly as the result of increased use of purchased feeding-stuffs, as rations for livestock have become more liberal. This increase, however, has been comparatively small, and variations in the rate of *net* replacement of imports from year to year have been broadly similar to those in gross value of output in terms of imports. The average net replacement of imports per acre over the whole period was a little over £9.

In the course of production, indigenous resources (other than land) to the value of £11·3 per acre, on average, were used, consisting as to £6·7 of farm labour and as to £4·6 of other resources. The replacement of imports to the value of £100 net thus required the use, on average, of about 11 acres of land and £123 of other home resources, of which £73 consisted of farm labour.[1]

Turning to the results achieved by the four different types of farms referred to above, it will be seen from Table II that, so far as the net value of output in terms of import prices is concerned, there are no marked differences in performance between the various production-types, with the exception that the dairy farms showed slightly worse results than the average for the whole sample. The figure in each case, however, lay between £8·7 and £9·4 per acre. These comparatively uniform net figures, however, conceal considerable variations in the *gross* value of output and in the amounts of imported materials utilised. The dairy and other livestock-producing farms, in general, marketed a considerably higher value of produce, in terms of import prices, than crop-selling and mixed farms. This, however, was largely offset, and, in the case of dairy farms, more than offset, from the point of view of net import-replacement, by their greater expenditure on imported materials, particularly animal feeding-stuffs.

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[1] Throughout this paper, the cost of farm labour includes the value of manual labour performed by the farmer himself, but does not include any charge for the farmer's managerial work.

TABLE II

Replacement of Imports by Different Types of Farms, 1945/6 *to* 1948/9

	Dairy farms.	Crop-selling farms.	Live-stock farms.	Mixed farms.	All farms.
Gross replacement of imports (£ per acre)	13·4	12·7	13·7	12·7	12·9
Imported materials used (£ per acre)	4·7	3·4	4·3	3·4	3·7
Net replacement of imports (£ per acre)	8·7	9·3	9·4	9·3	9·2
Home resources used :					
Labour (£ per acre)	8·0	5·9	6·0	6·7	6·7
Other home resources (£ per acre)	4·8	4·8	4·4	4·4	4·6
Total home resources (£ per acre)	12·8	10·7	10·4	11·1	11·3
Home resources used per £100 net replacement of imports :					
Land (acres)	11·5	10·8	10·7	10·8	10·9
Labour (£)	92	64	64	72	73
Other home resources (£)	55	52	47	48	50
Total home resources (£)	147	116	111	120	123
Number of farm returns in sample	324	116	120	206	748
Average area per farm (acres)	143	528	242	285	259

Moreover, although, as regards the net value of imports replaced per acre, there is little to choose between the different types of farms, Table II shows that dairy farms required considerably more than the average amount of labour per acre. Taking this factor into account, it may therefore be said that dairy farms gave the least satisfactory performance, requiring, for every £100 of imports replaced, not only somewhat more land but also a good deal more labour and other home resources. Among other types of farms, there was little to choose, although, on the whole, livestock producers gave slightly better than average results.

Two further factors, however, need to be considered :

(*a*) The possible effects of differences in size of farm within the various production-types.

(*b*) The effects of possible future trends in import prices for different commodities.

(a) *Effect of Size Variation.* Later in this paper, data are presented which indicate a marked increase in the value of imports replaced per acre, and a marked economy in the use of home resources for a given import-saving, as farms increase in size. As is shown by the last line of figures in Table II, the average size of dairy farms in the sample is considerably below that of the whole sample of farms, while that of crop-selling farms is well above the general average. It might, therefore, reasonably be assumed that at least some part of the difference in results between dairy and other farms can be accounted for by this difference in size.

This assumption can be tested by examining the results for different production-types within a more limited size-range. In Table III figures similar to those in Table II are given for farms within the size-range of 100–300 acres.

TABLE III

Replacement of Imports by Medium-sized Farms of Different Types, 1945/6 *to* 1948/9

	Dairy farms.	Crop-selling farms.	Live-stock farms.	Mixed farms.	All medium-sized farms.
Gross replacement of imports (£ per acre)	13·0	12·8	10·5	12·0	12·4
Imported materials used (£ per acre)	4·5	3·1	2·2	3·8	3·8
Net replacement of imports (£ per acre)	8·5	9·7	8·3	8·2	8·6
Home resources used :					
Labour (£ per acre)	7·6	6·3	6·0	6·9	7·0
Other home resources (£ per acre)	4·7	4·8	3·8	4·6	4·6
Total home resources (£ per acre)	12·3	11·1	9·8	11·5	11·6
Home resources used per £100 net replacement of imports :					
Land (acres)	11·8	10·3	12·0	12·3	11·6
Labour (£)	90	65	72	85	81
Other home resources (£)	55	49	46	56	53
Total home resources (£)	145	114	118	141	134
Number of farm returns in sample	158	30	34	107	329
Average area per farm (acres)	153	214	191	187	177

Because of the relatively small size of the sample too much reliance cannot be placed on these figures, particularly for the crop-selling and livestock-selling groups (with only thirty and thirty-four returns respectively). Subject to this qualification, however, these figures tend to confirm those for the whole sample of farms.

The average size of the crop-selling farms in this limited sample is less than half that in Table II, while the livestock and mixed farms are also appreciably smaller. The effect is to narrow considerably, but by no means to eliminate, the difference in results between dairy farms and other types. Livestock and mixed farms now show approximately equal results to dairy farms as regards net import-saving per acre, but livestock farms are still noticeably better from the point of view of utilisation of home resources for a given saving of imports. Crop-selling farms appear considerably better than the average in both respects.

(b) *Effect of Commodity Price Changes.* As has been indicated, the figures in the preceding tables have been calculated on the basis of import prices ruling during the first half of 1949. The price relationships for different commodities in that period cannot necessarily be regarded as representative of those likely to prevail in the future. Indeed, considerable changes in price relationships have taken place during the past year or two. Prices of cereals, and particularly coarse grains, which by early 1948 had risen to five or six times the pre-war level, have fallen heavily, while the trend of prices of livestock products, particularly meat, which have risen far less than those of cereals compared with pre-war, has been upwards. Clearly, the continuation of these trends would substantially increase the import-saving possibilities of dairy and livestock-producing farms relatively to those of crop-selling farms. For not only would it increase the gross import-replacement value of the main products of dairy and livestock farms while reducing that of crop-selling farms, but it would also reduce the cost, in terms of imports, of one of the main raw materials of dairy and other livestock production, *i.e.*, animal feeding-stuffs.

Notwithstanding the price changes which had taken place up to mid-1949, the scales were still weighted, as compared with pre-war levels, in favour of crop-producing as compared with livestock and dairy farms. The average value of imports of maize in the first six months of 1949 was still nearly six times the average for the five years 1934–38, that of imported wheat three and a half times and that of barley three times, while imported meat prices were only about double those of the pre-war period.

Recent long-term forecasts of world supplies of foodstuffs indicate that cereals are likely to reach a position of abundance some years in advance of the restoration of "normal" supplies of livestock products. The world meat outlook for the next few years appears to be particularly gloomy. It thus appears not unreasonable to anticipate a return, during the next few years, to price-relationships no less favourable to livestock produce, as compared with cereals, than those prevailing before the war. It is worth while examining the effects of such a change on the relative import-replacement possibilities of the different types of farms.

In Table IV are set out the results which would follow, so far as the sample of farms under consideration is concerned, from a rise or fall in the prices of the four main commodities—wheat, coarse grains, meat and cheese—to a level of 300% of the average declared value per cwt. of imports in the five years 1934–38.

TABLE IV

Replacement of Imports by Different Types of Farms at Import Values for Main Commodities Adjusted to Three Times Pre-war.

	Dairy farms.	Crop-selling farms.	Live-stock farms.	Mixed farms.
Net replacement of imports per acre (£)	9·4	8·6	11·9	9·8
Home resources used per £100 net replacement of imports :				
Land (acres)	10·6	11·6	8·4	10·2
Labour (£)	83	68	50	68
Other home resources (£) . .	50	56	37	47
Total home resources (£) . .	133	124	87	115

This table presents a picture considerably more favourable to livestock and milk production than Table II. The livestock farms, which, even at early 1949 prices, tended to have a somewhat better performance than other types, more particularly as regards home resources used for a given saving of imports, would now be well ahead as regards both the saving of imports per acre and the amount of home resources, other than land, required per £100 saving. Mixed farms approach to the general average in performance. As between dairy and crop-selling farms there would be little to choose. Dairy farms would achieve a somewhat higher replacement of imports per acre, but at an appreciably higher cost in home resources (more particularly labour) than crop-selling farms.

It seems possible to draw the following conclusions :

(i) From the point of view of import-saving, there is everything to be said for preferring livestock production to other types of farming. It appears to achieve, even at 1949 import-price levels, about as good results as other types of production in relation to land and other resources used, and the continuance of present price-trends would put it well ahead of other types in this respect.

(ii) The question how far increased milk production should be preferred to sale-crops is largely a matter of weighing the superior dietary value of additional liquid milk against any disadvantage its production may involve from the point of view of import-saving. As a saver of imports, milk compares unfavourably with sale-crop production at prices prevailing in 1949, and, bearing in mind the level to which liquid milk consumption has already risen compared with pre-war, the dietary advantage of further increase at the expense of sale-crops might be thought to be purchased at rather too high a cost, if these relative import prices were to continue. A change in price-ratios to about the pre-war position, however, would put milk on more or less level terms as regards import-saving and in that event the dietary advantages would be a sheer gain.

(iii) As between further milk production and increased livestock production the position is reversed. It may be doubted whether the moderate advantage which livestock production appears to show, from the import-saving point of view, at 1949 price-ratios is sufficient to justify preferring it to milk. But a change in price-ratios to the pre-war level would so increase the relative import-saving advantage of livestock as compared with milk as to make it questionable whether the dietary gain from more milk justified the cost in foreign exchange.

(iv) As has been pointed out above, the comparisons between dairying and other types of production in Tables II, III and IV are based, in the case of milk, on the import price of cheese. If there were any question of expanding other forms of production at the expense of milk, this basis of comparison would be quite inappropriate. It would then be necessary to value milk on the basis of the price of imported condensed milk, which would give a figure almost double that resulting from the use of cheese as a basis of evaluation. The relative import-replacement values of the different types of farms would clearly be entirely changed, in a direction far more favourable to dairy farms.

Effect of Increasing Tillage

Apart from the relative import-saving values of different types of farming, as distinguished by the main commodities they produce for sale, there is also the question of differences in the use of land, and, in particular, the relative importance of tillage and grassland. It is an important aim of British agricultural policy to maintain the maximum tillage area. This is, no doubt, a reflection partly of the desire to secure the greatest possible area of cereals, especially wheat, partly of the need to make home agriculture as self-supporting as possible in the matter of feeding-stuffs for livestock. It is, however, also important to know what effect the maintenance of high tillage is likely to have on the capacity of the industry to save foreign exchange at the lowest possible cost in home resources.

In so far as a high proportion of tillage is associated with cash-cropping as the predominant farm enterprise, its effects on import-saving may be deduced from the immediately preceding section of this paper.

In Table V, the effects of increasing tillage, however, are shown for farms where some form of livestock enterprise predominates. In order to eliminate the effect of size-differences the

TABLE V

Replacement of Imports by Medium-sized Farms with Different Proportions of Tillage, 1945/6 *to* 1948/9

	Proportion of tillage to total area.			
	Less than 30%.	30–40%.	40–50%.	Over 50%.
Gross replacement of imports (£ per acre)	11·5	13·3	12·4	14·5
Imported materials used (£ per acre)	3·7	4·1	4·2	5·0
Net replacement of imports (£ per acre)	7·8	9·2	8·2	9·5
Home resources used :				
Labour (£ per acre)	6·8	7·7	7·4	8·0
Other home resources (£ per acre)	3·8	4·7	4·8	5·6
Total home resources (£ per acre)	10·6	12·4	12·2	13·6
Home resources used per £100 net replacement of imports :				
Land (acres)	12·9	10·9	12·1	10·5
Labour (£)	88	84	90	84
Other home resources (£)	49	51	58	59
Total home resources (£)	137	135	148	143
Number of farm returns in sample	59	87	51	39
Average area per farm (acres)	152	167	158	173

figures are confined to farms within the limited size-range of 100–300 acres since the general tendency is for the percentage of tillage to increase with the size of the farm. The farms whose results are embodied in this table are in all cases farms whose output consists as to 60% or more of livestock produce, though there is naturally some tendency for cash crops to increase in importance with the tillage-percentage, even on these predominantly livestock farms.

There is, as will be seen, on the whole a substantial increase both in the gross and in the net value of saleable produce per acre, measured in terms of import prices, as the proportion of tillage rises, though the increase is, perhaps, less marked than might be expected—an approximate doubling of the tillage area producing only about a 25% increase in gross and net import-savings. Moreover, the increase is not consistent throughout, a curious falling-off occurring on farms within the range of 40–50% of tillage. The rise in net import-replacement as tillage increases is lessened by the additional utilisation, by the high-tillage farms, of materials, directly or indirectly involving importation, particularly seed and fuel. It might have been expected that this would be offset by reduced purchases of feeding-stuffs on the farms with higher tillage, which should be able to grow more of their own feed. But, in fact, there is surprisingly little difference in purchased feeding-stuffs consumption per acre between farms at different levels of tillage. The import values of feeding-stuffs purchased by the four groups of farms in Table V were £2·7, £2·4, £2·3 and £2·7 per acre respectively.

The rise in net import-savings as tillage increases is accompanied by a considerable addition to the amount of home resources used other than land. This is what would be expected, since arable land obviously requires more labour, both manual and mechanised, as well as other resources, per acre than grass. The additional home resources used, however, are roughly only proportional to the increase in import-savings, with the result that, per £100 of imports saved, there is little variation in the consumption of home resources. The extra savings per acre of imports achieved by farms at the higher tillage levels, though only moderate in amount, seem, therefore, to be a net gain to the national economy.[1]

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[1] It should, of course, be pointed out that physical factors, *e.g.*, soil conditions, may limit the increase of tillage on many farms. All that the figures in Table V indicate is that high tillage is a desirable objective, in the national interest, on farms where physical conditions are suitable.

III. REPLACEMENT OF IMPORTS BY FARMS OF DIFFERENT SIZES

The range of size of farms in this country is extremely wide. The sample under consideration, for example, includes farms varying in size from 26 acres to 2,250 acres. Considerable differences in output and efficiency can be expected between farms of so wide a range of size, and the effect of such differences on import-saving capacity is of considerable importance from the point of view of agricultural policy.

Table VI shows the average replacement of imports in relation to resources used by farms in three size-groups: (*a*) under 100 acres, (*b*) 100–300 acres, (*c*) over 300 acres, during the four years 1945/46 to 1948/49.

As regards the *gross* value of sales, in terms of import prices, the small farms, with an average of £16·9 per acre, are well ahead of the medium and large farms, which averaged only £12·4 and £12·6 per acre respectively. These small farms, however, absorbed very much larger quantities of materials involving foreign-currency expenditure than larger farms: this additional consumption consisted mainly of feeding-stuffs, and resulted both from the greater preponderance of livestock, particularly dairy cows, on the smaller farms and from their generally more intensive stocking and in consequence their greater reliance on purchased feed.

TABLE VI

Replacement of Imports by Farms of Different Sizes,
1945/6 *to* 1948/9

	Farms under 100 acres.	Farms from 100–300 acres.	Farms over 300 acres.	All farms.
Gross replacement of imports (£ per acre)	16·9	12·4	12·6	12·9
Imported materials used (£ per acre) .	7·0	3·8	3·4	3·7
Net replacement of imports (£ per acre) .	9·9	8·6	9·2	9·2
Home resources used:				
Labour (£ per acre)	9·5	7·0	6·1	6·7
Other home resources (£ per acre) .	6·3	4·6	4·4	4·6
Total home resources (£ per acre) .	15·8	11·6	10·5	11·3
Home resources used per £100 net replacement of imports:				
Land (acres)	10·1	11·6	10·8	10·9
Labour (£)	96	81	66	73
Other home resources (£) . . .	64	53	47	50
Total home resources (£) . . .	160	134	113	123
Number of farm returns in sample .	206	329	213	748
Average area per farm (acres) . .	71	177	555	259

The resulting *net* import-replacement value of the output of small farms was thus, at £9·9 per acre, only slightly higher than that of larger farms (£9·2), which in turn somewhat exceeded that of medium-sized farms (£8·6).

The amounts of home resources, especially labour, per acre of land, required by small farms were very considerably higher than average, the best results in this respect being achieved by farms in the largest size-group. Thus, while the variation in net import-replacement per acre of land between the different sizes of farms is relatively small, there is a substantial reduction, as farms increase in size, in the amounts of labour and other home resources required for a given value of imports replaced; for every £100 of imports saved, small farms used £160 of home resources (including £96 of labour [1]), medium farms £134 (including £81 of labour) and large farms only £113 (including £66 of labour).

In view of the relatively high preponderance of dairy farms in the small-size-group, however, it is possible that the comparatively poor performance of these small farms may be due partly to this factor, bearing in mind the relatively uneconomic results achieved by dairy farms, as compared with other types, at early 1949 price

TABLE VII

Replacement of Imports by Dairy Farms of Different Sizes, 1945/6 to 1948/9

	Farms of under 100 acres.	Farms of 100–300 acres.	Farms of over 300 acres.	All dairy farms.
Gross replacement of imports (£ per acre)	16·1	13·0	12·3	13·4
Imported materials used (£ per acre)	6·9	4·5	3·6	4·7
Net replacement of imports (£ per acre)	9·2	8·5	8·7	8·7
Home resources used :				
Labour (£ per acre)	10·3	7·6	7·0	8·0
Other home resources (£ per acre)	6·1	4·7	4·2	4·8
Total home resources (£ per acre)	16·4	12·3	11·2	12·8
Home resources used per £100 net replacement of imports :				
Land (acres)	10·8	11·8	11·5	11·5
Labour (£)	112	90	80	92
Other home resources (£)	66	55	48	55
Total home resources (£)	178	145	128	147
Number of farm returns in sample	133	158	33	324
Average area per farm (acres)	68	153	372	143

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[1] A much higher proportion of the labour used on these small farms is, of course, family labour than on larger farms and it cannot be assumed that such labour would be readily transferable to other occupations.

levels. In Table VII therefore, in order to eliminate, so far as possible, the effect of variations in production between different size-groups, similar figures to those in Table VI are given for dairy farms only. These figures confirm the conclusions drawn from the whole sample of farms. The net replacement of imports per acre is, in general, slightly less for the dairy farms than for the whole sample, while their labour requirements are higher than the general average. For every £100 of imports replaced, therefore, the area of land occupied and the amounts of home resources utilised are greater for all sizes of dairy farms than the corresponding averages for farms of all types. But there is a closely similar relationship between the performance of farms of different sizes, whether dairy farms alone or farms of all types are considered. In the dairy-group, just as in the whole sample of farms, the small farms replaced a somewhat higher net value of imports per acre than larger farms but absorbed considerably more labour and other home resources in the process. The amount of home resources (other than land) required for every £100 of imports saved by dairy farms fell substantially as the size of farm increased.

As has been stated, one of the main factors operating to reduce the relative effectiveness of small farms, from the point of view of net import-saving, is their comparatively high consumption of purchased feeding-stuffs. The continuance of reductions in prices of imported feed relatively to other import prices would therefore tend to improve the results achieved by small farms in comparison with larger holdings.

From the point of view of the balance-of-payments problem alone—and disregarding the social considerations involved—it would appear, from the above figures, that the relative advantages of smaller or larger farms depend largely on the labour situation. The net saving of imports by British agriculture would apparently be increased somewhat by a reduction in the average size of farms, not only because, acre for acre, the small farm tends to have a higher output, valued in terms of net imports, than the large farm, but because the small farm tends to concentrate more heavily on dairying and livestock production, which, on present price-trends, give greater promise of import-saving per acre of land used than cash crop-production. So long as labour is scarce, however, the advantages of small farms in this respect are probably outweighed by their considerably higher labour requirements per £100 of imports saved. If a position of labour surplus were to develop, this offsetting disadvantage would be removed—particularly bearing in mind the considerable proportion of immobile labour employed on small farms.

IV. THE EFFECT OF INTENSIFICATION OF OUTPUT ON THE ECONOMY OF IMPORT-REPLACEMENT

The Government's present programme of agricultural expansion is designed to increase the net value of British agricultural output by 1952 to a level 15% above the war-time peak of 1943/4. The achievement of this programme within this period clearly involves a considerable intensification of output, since the total area of land available for agriculture is variable only within very narrow limits, and the increase of output by improvements in farming technique must necessarily be a slow process.

It cannot be taken for granted that an intensification of output on the scale required would lead to a proportionate increase in net saving of imports (at a given level of national food consumption) or that any increase in saving that might result would be achieved economically in terms of home resources used. Some information on these questions can be obtained from the sample of farms under consideration by examining the results achieved by groups of farms operating at different levels of intensity of production, adopting as a basis of measurement of "intensity," the "net production" of each farm, *i.e.*, the actual money value of gross sales, plus or minus any increase or decrease during the year in the value of stocks on the farm and minus the cost of any livestock purchases.[1] It is appreciated that money value is not an entirely suitable basis of measurement of production, particularly under a fixed-price regime, where the relative prices of different commodities are artificially determined; but the disadvantages of a money value basis are considerably reduced if comparisons are confined to farms of similar production-types. Moreover, for an industry like agriculture, producing a wide variety of different commodities, it is difficult to find any satisfactory physical basis of measurement of production.

There is a further reason, in this instance, for confining the comparison to farms of similar types. There are substantial differences in average net production per acre between different types of farms: dairy farms, in particular, generally tend to have a considerably higher net production (measured by money value) than other kinds of farms. Figures covering farms of all types would thus be distorted by the varying incidence of different production-types at different levels of intensity.

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[1] Gross sales alone would give inflated figures for farms which buy in store livestock as compared with those which breed their own stock.

TABLE VIII

Replacement of Imports by Mixed Farms at Different Levels of Intensity of Production, 1945/6 *to* 1948/9

	Farms with annual net production of :				
	Under £12 per acre.	£12–16 per acre.	£16–20 per acre.	£20–24 per acre.	Over £24 per acre.
Gross replacement of imports (£ per acre)	7·8	10·6	13·3	15·5	20·2
Imported materials used (£ per acre)	2·3	2·8	3·2	5·1	6·6
Net replacement of imports (£ per acre)	5·5	7·8	10·1	10·4	13·6
Home resources used :					
Labour (£ per acre)	5·3	5·8	7·0	7·4	9·8
Other home resources (£ per acre)	2·8	3·6	4·5	5·4	7·4
Total home resources (£ per acre)	8·1	9·4	11·5	12·8	17·2
Home resources used per £100 net replacement of imports :					
Land (acres)	18·1	12·8	9·9	9·6	7·3
Labour (£)	96	74	70	71	72
Other home resources (£)	51	46	45	52	54
Total home resources (£)	147	120	115	123	126
Number of farm returns in sample	22	82	50	24	26
Average area per farm (acres)	248	318	281	236	271
Average net income per acre (£)	–0·4	1·8	3·4	4·6	6·5

In Tables VIII–X, the values of import-replacement in relation to land and other home resources utilised, at different levels of intensity of production, is shown for three types of farms—mixed farms, crop-selling farms and dairy farms.[1]

The three types of farms show strikingly similar results :

(*a*) In each case a steady increase in the gross value of output (measured in terms of import values) is accompanied by a more rapid and, generally, accelerating rise in the consumption of materials involving expenditure on imports, *e.g.*, fertilisers, fuel and feeding-stuffs.

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[1] A complication arises in the case of dairy farms in that, owing to the higher price per gallon of "quality" milks, those producing "quality" milk (*e.g.*, T.T. and Accredited) tend to have a higher net production *as measured by value* than farms producing ordinary milk, even though the *volume* of production may be no greater. For this purpose, therefore, consideration is confined to farms producing "quality" milks.

(*b*) In consequence, the net value of imports replaced does not rise proportionately to the increase in production. At the highest levels of intensity (except on the mixed farms) the rate of increase in *net* saving of imports slows down to a very marked extent as production rises.

(*c*) The amount of home resources, especially labour, absorbed *per acre* generally rises at an accelerating rate as production becomes more intensive.

(*d*) The net effect of the above tendencies is that although increased intensity of production, up to the highest levels prevailing in the sample under review, generally results in further net import-savings, these additional savings become increasingly meagre and, beyond a certain point, are achieved only at the cost

TABLE IX

Replacement of Imports by Crop-selling Farms at Different Levels of Intensity of Production, 1945/6 *to* 1948/9

	Farms with annual net production of :				
	Under £12 per acre.	£12-16 per acre.	£16-20 per acre.	£20-24 per acre.	Over £24 per acre.
Gross replacement of imports (£ per acre) . . .	8·2	10·9	13·5	16·0	18·7
Imported materials used (£ per acre)	2·0	2·5	3·3	4·1	6·9
Net replacement of imports (£ per acre) . . .	6·1	8·4	10·2	11·9	11·8
Home resources used :					
Labour (£ per acre) . .	4·0	4·8	6·6	7·2	9·2
Other home resources (£ per acre)	3·1	4·5	5·3	5·2	7·5
Total home resources (£ per acre)	7·1	9·3	11·9	12·4	16·7
Home resources used per £100 net replacement of imports :					
Land (acres)	16·1	12·0	9·8	8·4	8·5
Labour (£)	64	57	65	60	78
Other home resources (£) .	50	55	52	44	64
Total home resources (£) .	114	112	117	104	142
Number of farm returns in sample	25	30	32	16	13
Average area per farm (acres)	624	504	485	396	669
Average net income per acre (£)	0·3	1·8	2·9	5·0	5·2

TABLE X

Replacement of Imports by Quality Milk-selling Farms at Different Levels of Intensity of Production, 1945/6 *to* 1948/9

	Farms with annual net production of :				
	Under £16 per acre.	£16–20 per acre.	£20–24 per acre.	£24–28 per acre.	Over £28 per acre.
Gross replacement of imports (£ per acre) . . .	9·7	12·8	14·4	17·4	20·4
Imported materials used (£ per acre)	3·1	4·2	4·8	6·8	9·2
Net replacement of imports (£ per acre) . . .	6·6	8·6	9·6	10·6	11·2
Home resources used :					
Labour (£ per acre) . .	6·8	7·3	8·6	9·8	12·5
Other home resources (£ per acre)	3·5	4·7	5·5	7·2	8·3
Total home resources (£ per acre)	10·3	12·0	14·1	17·0	20·8
Home resources used per £100 net replacement of imports :					
Land (acres) . . .	15·1	11·6	10·4	9·4	8·9
Labour (£) . . .	102	85	90	92	111
Other home resources (£) .	53	54	57	68	74
Total home resources (£) .	155	139	147	160	185
Number of farm returns in sample	47	46	43	21	42
Average area per farm (acres)	222	204	173	121	81
Average net income per acre (£)	1·3	2·8	3·5	4·2	5·2

of a substantial increase in home resources (other than land) used per £100 of imports saved. The optimum point, from the point of view of resources required for a given import-saving varies according to the type of farm. On dairy farms increased cost in home resources begins to show itself at a relatively early stage; in the case of crop-selling farms, reductions in home resources used per £100 import-saving continue up to a relatively high level of intensity. The figures for dairy farms are, however, complicated by the fact that the more intensive farms tend to be smaller than the average, and, as has been shown, the smaller farms are generally the least economical in resources used per £100 of import saved; if the size-factor were eliminated, the optimum point in economy of resources for a given import-saving by dairy farms would probably occur at a somewhat higher production-level than is shown in Table X.

If these figures are any guide to the general position, there is clearly very considerable scope for raising the import-replacement capacity of British agriculture both per acre of land and in relation to other home resources used (such as labour) by increasing the intensity of production on farms at the lower levels of output —always assuming the present occupiers of those farms to be technically capable of achieving additional output economically. It will be seen from Tables VIII–X that the majority of the farms whose figures are included in these tables are at present operating at a level of production below the optimum, as regards import-saving per acre of land, and that a substantial proportion are below the optimum in respect of other home resources used for a given saving of imports.

Measures appear to be needed which would give an incentive to increased output in these lower-intensity groups without stimulating further intensification, at excessive cost in resources and comparatively little additional import-saving, at the highest levels. At present the principal instrument for affecting production is the forward-price system. It appears from the figures in Tables VIII–X that this system has not operated ideally during recent years, from the point of view of securing the optimum level of output. The figures of average net income given in the last line of each of these tables show that quite appreciable net incomes have been obtainable, even at low levels of output; crop-selling and mixed farms with net production of only £12 to £16 per acre have, on average, earned net incomes of almost £2 per acre, while dairy farms with less than £16 per acre net production have earned net incomes of nearly 30*s.* per acre. At the same time, for those farmers whose aim is to achieve the maximum income, there has been a substantial profit incentive to expand output beyond the level which gives the best results from the national point of view. In all types of production the highest profits have been earned, on average, by the most intensive farms, though, in general, these are not the farms which have made the best use of resources for the purpose of import-saving.

One method of correcting this defect would be to reduce the amount of farmers' total incomes at present received in the form of prices paid for produce and correspondingly to increase the amount received as direct subsidisation of operating costs. A moderate reduction in commodity prices—of the order of, say, 5–10%—would reduce net incomes on farms of low output to comparatively small dimensions, and would thus provide an incentive to increased output as a means of maintaining profits. This process would be further stimulated by additional subsidisation of measures designed to increase output, *e.g.*, ploughing-up grants, liming subsidies, subsidisation of fertilisers, etc. At the same time, the result of a general moderate price-reduction should be to lower the point of optimum profit, and thus to remove or considerably reduce the incentive to carry production to uneconomically high levels. Moreover, additional direct financial assistance towards production costs might be expected to provide less of a stimulus to increased output in the case of farmers already operating at a high level of intensity than for those at a low level where the opportunities for increased production are greater. It is fully appreciated that the above is probably an over-simplification of the effects of such a step as is proposed. In some cases, price reductions might result in attempts to maintain net incomes by reducing expenditure rather than increasing output, and this might lead to a drop in the import-saving per acre by such farms. The increased financial assistance proposed towards specific production-costs is, however, designed to prevent this. And, in so far as it occurred, it would not necessarily be contrary to the national interest, provided it resulted in a more than compensating fall in the home resources, other than land, absorbed per £100 of import-saving.

The main danger of the line of action suggested is the possibility that an excessive price reduction might introduce a general disincentive to production all down the scale; and great care would be needed both in calculating the appropriate amount of such price reductions and in planning the compensating measures of direct assistance towards operating costs so as to ensure that economic production at high levels of output per acre was not discouraged.

Notwithstanding these reservations, however, the general conclusion seems justified that, carefully operated, the net effect of what is suggested should be not only an overall increase in the replacement of imports by British agriculture, but also a reduction in the average amount of home resources utilised per £100 of imports replaced.

As regards the absolute amount of home resources absorbed by agriculture, it seems probable that some increase would result, though not *pro rata* to the additional import-replacement. Whether such an increase would be justified, of course, depends on the comparative economy of utilisation of resources by agriculture and other industries.

V. SUMMARY OF CONCLUSIONS

The results achieved by the sample of farms whose accounts and records are considered appear to lead to the following conclusions :

(1) The average net value, measured in terms of imports at early 1949 prices, of the saleable output of farms in southern England, after deducting the value of imported materials consumed, was of the order of £9 per acre.

(2) Every £100 net import equivalent produced required the use of about 11 acres of land and about £120 worth of other indigenous resources.

(3) At early 1949 import prices, the net import-replacement capacity per acre of the four main types of farms—dairy, cash-cropping, livestock and mixed farms—was comparatively uniform. Dairy farms, however, gave somewhat lower net savings per acre. than other types of farms, and, at the same time, absorbed considerably more labour and other home resources per £100 import-replacement. Against this must be set the substantial nutritional advantages of milk production.

(4) If present price-trends were to continue until something like pre-war price relationships between the main imported foods were restored, the present advantage of sale-crop over milk production, from the point of view of import-replacement for a given consumption of home resources, would virtually disappear and would be easily outweighed by the nutritional advantages of milk. The production of other livestock products, *e.g.*, fat stock and eggs, would become the most effective and economical means of replacing imports.

(5) The maintenance of a high tillage area is likely to give moderate gains in terms of import-saving per acre, compared with grassland farming, at present levels of grassland management, and with approximately the same expenditure of home resources per £100 of imports saved.

(6) Small farms tend to attain a slightly higher level of import-replacement per acre of land, but at a disproportionately heavy expenditure of labour and other indigenous resources, especially the former. A good deal of the extra labour used, however, is relatively immobile family labour. From the economic standpoint, the merits and demerits of the small farm appear to depend largely on the relative scarcity or otherwise of labour.

(7) Beyond a certain point, increasing the intensity of production on farms will achieve only small additional net import-

savings per acre at increasing cost in home resources (other than land) per £100 of imports saved. The majority of farms do not appear to have reached this point of optimum intensity, though a small proportion seem to have passed it.

(8) There appears to be great scope for measures which will intensify output on farms at a low level of output without stimulating further intensification of farms at the highest output levels. Any general downward tendency in prices of imported food would, of course, lower the point of optimum production per acre and reduce the scope for economically increasing intensity of output.

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THREE CONCEPTS OF THE BALANCE OF PAYMENTS AND THE SO-CALLED DOLLAR SHORTAGE

THE confusion concerning the meaning of a deficit or a disequilibrium in the balance of payments is almost as old as the study of political economy. But never before has it been so widespread; and rarely so systematically exploited. To be sure, most of the people who speak and write of the so-called "dollar shortage" are honestly confused. But there are probably some who know better and try to take advantage of the general confusion for political purposes if only out of patriotic motives. In any case, we have no right to abet confusion through continued equivocation. Three fundamentally different ideas are continually called by the same name. For the sake of clearer thinking they should be distinguished.

What is indiscriminately called the balance of payments may be: I. *A Market Balance, i.e.*, a balance of supply and demand; or II. *A Programme Balance*, *i.e.*, a balance of hopes and desires; or III. *An Accounting Balance, i.e.*, a balance of credits and debits.

The market balance of payments is a model of a given situation in the foreign-exchange market, characterised by the effective demand and supply of foreign exchange at the given exchange rate and at alternative, hypothetical rates. This is an *ex ante* concept for use in the analysis of the foreign-exchange market, with major emphasis on the effects which changes of the exchange rate might have upon the amounts of exchange effectively demanded and supplied.

The programme balance of payments is a statement of sources and uses of foreign funds, expected or planned, over a future period of one or more years, based upon the nation's capital and consumption requirements, and on a programme of meeting an excess of requirements over resources by recourse to foreign finance expected or sought. This also is an *ex ante* concept, not for analysis but for use in planning, forecasting or negotiating, with major emphasis not on what is effectively demanded, but on what is felt to be desirable with reference to some accepted standards.

The accounting balance of payments is a record of all transactions, real and financial, which have taken place over a past period of one or more years between the country's residents and residents of other countries, the record being kept in the form of double-entry book-keeping, with each credit entry balanced by an offsetting debit entry, and vice versa. This is an *ex post* concept based on statistical information and estimates for use chiefly in the description of past developments and perhaps also in the appraisal of the present position of one nation in relation to others.

The meaning of a deficit in the balance of payments is, of course, categorically different for each of the three basic concepts. But also within each concept the meaning of a deficit is by no means clear. There may be several different deficits depending on a number of arbitrary definitions, assumptions, hypotheses, judgments or objectives, even after one has decided whether one speaks of a market, a programme or an accounting balance.

I. *The Market Balance of Payments*

In an attempt to define a dollar shortage or a deficit in the dollar balance of payments in the market sense (or supply and demand sense), one should be deliberately vague on certain points in order to allow for differences in assumptions and hypotheses which can be legitimately made.

A dollar deficit in a country's market balance of payments may be tentatively defined as an excess of dollar amounts effectively demanded at the given exchange rate by would-be purchasers (who are not restricted by specially adopted or discretionary government control measures) over the dollar amounts supplied at that exchange rate by would-be sellers (who are not motivated by a desire to support the exchange rate).

1. The phrase " *effectively demanded* " is to mean that the would-be buyers possess and are willing to part with the domestic money to pay for the foreign exchange. Effective demand for dollars means supply of domestic money in exchange for dollars; and excess demand for dollars means excess supply of domestic money in the exchange market. Of course, total cash balances, bank credit outstanding and incomes are assumed to be given.

The concept of a " given " demand for dollars has several implications: (*a*) The case of a continuing credit expansion, of a continuous " feeding " of demand by the creation of additional bank credits or other forms of money is ruled out.[1] (*b*) When an excess demand for dollars is met by sales from monetary reserves

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[1] The process of a continuing expansion would be represented by a continuing shift of the demand curve for foreign exchange upward and to the right (and of the supply curve upward and to the left). At a fixed exchange rate the excess demand for foreign exchange would continually rise, and with freely flexible rates the successive " deficits " in the market balance of payments would regularly be eliminated by continual increases in the price of the dollar.

(for the sake of maintaining exchange-rate stability) these sales tend to reduce domestic circulation and, thus, the would-be buyers' ability to sustain the given demand for dollars.[1] We must understand the effective demand as that which would-be buyers of dollars can exercise before their buying power may be impaired through dollar sales out of monetary reserves. (*c*) When an excess demand for dollars is reduced through an increase in the price of the dollar, *i.e.*, a depreciation of the currency, the reduction of dollar sales out of official reserves and the improvement in the foreign balance on current account may result in an increase in the domestic money supply and income level, and thus, in an increase of the demand for dollars.[2] Again, the " given " demand for dollars cannot show these repercussions of the change in the exchange rate.

In order to show the repercussions of changes in income, our working model should include, in lieu of a " given " demand for dollars, a family of demand curves with different income parameters. As long as we try to deal with a " given " demand, we have to assume that the buying power which makes this demand effective is unchanged. This assumption, I am afraid, limits the use of a market model which includes only a " given " demand curve to short-period analysis.

2. The phrase " *at the given exchange rate* " may mean any exchange rate whatever, but the excess demand for dollars would then be purely hypothetical. More often the " given " exchange rate will refer to the one actually prevailing, at least at the outset of the imagined process. Most often it will refer to the rate fixed and maintained by the monetary authorities.[3]

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[1] The " deflationary " effects of dollar sales out of monetary reserves would come to an end when the income flow is reduced to such a level that current savings out of received incomes are low enough to be adjusted to the reduced rate of " investment " (domestic investment minus the import balance).

[2] The existence of a continuing dollar deficit on current account at a stabilised dollar rate may be consistent (as was indicated in the preceding footnote) with stationary income equilibrium if the rate of saving has adjusted itself to the import balance. If, then, the depreciation reduces the dollar deficit, the domestic income flow must increase and, depending on the marginal propensity to import, the effective demand for dollars must also increase.

[3] Underlying the whole market analysis is usually the notion that the size of the excess demand is a function of the exchange rate and that in all probability an exchange rate could be found at which the excess demand is zero. Nevertheless, there are theories denying the existence of an equilibrium exchange rate under certain conditions and, under other conditions, asserting that the equilibrium may be unstable. In any event, the model of the foreign-exchange market with given supply and demand functions serves equally those who believe and those who do not believe it probable that there is always an exchange rate which can equate the dollar amounts demanded and supplied.

3. The phrase "*not restricted by specially adopted or discretionary government control measures*" is the most delicate part of the definition; it is designed to prevent the definition from becoming unnecessarily narrow and to make it applicable to a variety of assumptions. A given demand curve for dollars assumes a large number of "underlying" conditions including the levels of income and buying power, the supply and demand conditions for all domestic and foreign products, and also the existence of governmental obstacles, incentives or prohibitions. Import tariffs, import quotas, import prohibitions, subsidies for home-made substitutes of foreign products, excise taxes on goods containing imported materials, limitations on foreign travel and hundreds of similar governmental measures are among the factors determining a country's effective demand for dollars. To assume "absence of all government intervention" would be silly if the model is to aid in the analysis of reality. On the other hand, to assume the existence of comprehensive foreign-exchange controls (allocation controls) and to include in the effective demand for dollars only those amounts which the control authorities will actually authorise would be worse, because it would define away the very problem we are out to solve, the excess demand for dollars. On what grounds, then, should we distinguish governmental control measures that can be assumed as given among the factors determining the effective demand for dollars from other measures that cannot be so included?

The answer to this question will usually be suggested by the setting of the problem to be solved. For example, if with a given set of non-discretionary control measures the problem is to analyse the possible effects of depreciation without a change in the controls, the "given" demand will surely be on the basis of the existence of the controls. An absolutely effective prohibition of capital exports—if such a thing can exist—may exclude the demand for dollars by would-be capital exporters and reduce the relevant demand to that by importers of foreign goods and services. If the problem includes a comparative evaluation of specific (non-discretionary) control measures, the best procedure might be to work with two demand curves, one including, the other excluding, the effects of the controls in question. If the problem is to find out whether existing restrictions which were adopted merely for the duration of an emergency can be abandoned, these restrictions will be assumed to be absent so that one may see the picture of a possible market balance or imbalance without the use of the restrictions. If controls are of a kind that can be administered only with a discretion which in turn is affected by the size of the excess demand, then the "given" demand should certainly not reflect the exercise of these controls.[1]

4. The phrase "*not motivated by a desire to support the exchange rate*" is designed to separate the sales of foreign exchange out of monetary reserves and out of foreign stabilisation loans from the sales properly regarded as the "supply" of exchange in the market in which the balance between supply and demand is being analysed.

The "market supply" is by no means confined to transactions on income account, that is, to the proceeds from sales of exported goods and services (and certain donations). It includes also all those transactions on capital account (and all those donations) which are not the result of deliberate efforts to satisfy an effective demand for foreign exchange that could not otherwise be satisfied at the given exchange rate. Long-term capital imports, that is, direct investment by foreigners and the proceeds from the sale of securities to foreigners, are unquestionable components of the market supply of foreign exchange. And there is no reason why the market supply should not also include the foreign exchange derived from official (governmental or institutional) loans for relief, rehabilitation, reconstruction and development. Of short-term capital imports, the autonomous ones, such as funds of foreign capitalists placed in the country (whose balance of payments is being analysed) either for safekeeping or in order to profit from interest differentials are also clearly eligible for inclusion in the market supply of foreign exchange.[2] The

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[1] Ardent believers in a free economic order may have a bias towards thinking of the effective demand always as if it were as "pure" as possible, *i.e.*, unaffected by restrictive government controls. Ardent believers in centralised planning, on the other hand, may refuse even for theoretical analysis to abstract from foreign-exchange restrictions, except in order to prove that a free market is inherently unstable and injurious to the national interest. The technique of analysis implied in the concept of the market balance dictates neither of these prejudices, although, as was said before, the logic of the conception of a demand function of determinate elasticity forbids us to include in the function the probable effects of discretionary restrictions (where the exercise of the restrictions is not restricted by any stated rules but only by the *ad hoc* rulings of the administrators).

[2] Doubtful is the inclusion of short-term capital imports of private exchange speculators. These might be either foreigners willing temporarily to increase their balances (claims) in the country, or nationals willing temporarily to reduce their foreign balances or to increase their foreign debts. They are motivated by expectations of profiting from a merely temporary weakness of the domestic currency in the exchange market. In an analysis of the position of the monetary authorities, the foreign funds made available by exchange speculators might possibly be regarded as part of the market supply of foreign exchange, because this supply will relieve the pressure upon the monetary authorities and reduce the drain of official monetary reserves. From other points of view it seems

" market supply " of dollars includes all those dollars that come to the exchange market as effective demand for domestic money. In other words, these dollars are offered because the would-be sellers want domestic money.[1]

Excluded from the " market supply " are the dollars sold out of the gold and foreign-exchange reserves of the monetary authorities, and out of foreign stabilisation loans, and the rate-pegging purchases of domestic currency by foreign monetary authorities and international institutions such as the International Monetary Fund. These are the funds which are made available for the purpose of meeting all or part of the deficit in the market balance; they are supplied in order to support the exchange rate, not in order to get domestic currency.

5. Every supply-and-demand analysis has several *time* aspects: it pictures a situation prevailing at a particular moment of time and expected to last for a definite or indefinite period of time; it deals with quantities offered or demanded per unit of time; and it expresses the changeability of these quantities in response to changes in price with a certain time interval allowed for the adjustment. We are concerned at this point with how long the situation depicted by the market curves is expected to last. This is a time aspect of great significance in policy decisions. If an excess demand for foreign exchange is expected soon to give way to an excess supply, the problem of the " dollar shortage " is surely quite different from what it would be if no change was expected in the foreseeable future.

Disregarding day-to-day and even seasonal fluctuations, and speaking only of deficit periods long enough to constitute serious

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preferable not to include the speculators' funds in the market supply of foreign exchange, especially since some of the consequences of these speculative transactions are very similar to those of reductions of the gold or exchange reserves of the monetary authorities. On these questions see my article on " The Theory of Foreign Exchanges," *Economica*, 1939 and 1940, especially pp. 42 ff. Reprinted in *Readings on the Theory of International Trade*, Philadelphia, Blakiston, 1949, pp. 149 ff.

[1] Many of the comments made above regarding effective demand have analogous relevancy for the market supply. The offer of foreign exchange, for example, may be the consequence of governmental measures stimulating the exports of merchandise or prohibiting the holding of foreign balances (claims); and it may depend upon the problems at hand whether the effects of the " interventions " should be included in or excluded from the market supply. There is also again the question of changes in the domestic income level affecting the exportability of home products and the flow from other sources of supply of foreign exchange. This either calls for a family of supply curves with different income parameters or it limits the use of a " given " supply curve to problems for which changes in income can be legitimately disregarded.

problems for monetary authorities intent upon maintaining exchange-rate stability, we may distinguish three kinds of cases : (*a*) The excess demand is judged to be cyclical in character, that is, associated with a particular phase of a national or international trade cycle, and hence likely to disappear in due time even without any special measures on the part of the governments concerned. (*b*) The excess demand is judged to be associated with structural or monetary factors expected to change before long in consequence of certain measures taken by the government or of certain developments afoot in the economy. (*c*) The excess demand is judged to be associated with conditions not expected to change significantly in the foreseeable future. Cases (*a*) and (*b*) are those in which the International Monetary Fund would consider sales of dollars against the currency temporarily in excess supply. In case (*c*) the I.M.F. would favourably consider a depreciation of the currency in excess supply.

6. There are several different *policies* for dealing with a deficit in the market balance of payments. *A*. The excess demand for dollars at the given exchange rate can be reduced or removed by altering the rate. The proper adjustment of the exchange rate is typically a depreciation of the domestic money, *i.e.*, a higher price for the dollar. *B*. The excess demand for dollars can be satisfied at the given exchange rate through sales of gold or dollars by the national or international monetary authorities. *C*. The excess demand for dollars can be left unsatisfied, the short amount supplied being distributed among would-be buyers by rationing, administrative allocation or similar discretionary restrictions of foreign-exchange transactions. *D*. The excess demand for dollars can be reduced or removed by monetary and fiscal measures reducing the money circulation and income flow of the country. *E*. The excess demand for dollars can be reduced (though rarely removed) by restrictive commercial policy, thus reducing, through higher import barriers, the demand for dollars (a shift which ordinarily will imply increased domestic demand for other things including exportable goods, and thus tend to reduce the supply of dollars [1]). *F*. The excess demand for dollars can be reduced (though rarely removed) by persuading other countries to a more liberal commercial policy, thus increasing, through reducing their import barriers, the supply of dollars (a shift which

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[1] This reservation need not be relevant where policy *E* is adopted after policy *C* has been in use for a considerable time and the particular import demand that is now eliminated by new import barriers had been in any case unsatisfied under existing exchange controls. Policy *E* then merely reduces the demand for imports and dollars without reducing actual imports and purchases of dollars.

ordinarily will imply increased domestic demand for imports and dollars [1]).

Policies *E* and *F*—import barriers and removal of export barriers—have in common with Policy *D*—deflation—that they are attempts to remove the gap between the supply and demand curves by shifting them until they intersect at the existing exchange rate. Policy *A*—exchange depreciation—attempts to close the gap by movements along the existing curves towards the point where they intersect. Policy *B*—exchange stabilisation—attempts (by rate-pegging sales out of reserves) to fill the gap between the existing curves at the existing exchange rate. Policy *C*—exchange restrictions—leaves the existing curves, the existing rate and the existing gap as they are, but suspends the free market.[2]

Depreciation as well as deflation are apt to reduce real wages the former by raising prices of imports and possibly increasing exports at the expense of home consumption, the latter by lowering money incomes in the economy. Policies *A* and *D* are unpopular for these reasons, and *B* and *C* are the monetary policies preferred by most politicians and many political economists. Since *B*, however, drains the foreign reserves of the country, *C*—restrictions—are relied upon in increasing degrees. Foreign loans strengthen the reserves for continuing policy *B*, but as soon as foreign loans give out, policy *C* becomes more stringent and the " dollar shortage " is perpetuated. This policy is rationalised by the contentions that deflation would lead to Communism, and that depreciation would under trade-union pressure become inflationary and, thus, could not eliminate the excess demand for dollars. It is true that trade-union pressure for excessive wages will lead either to unemployment or to inflation (open or repressed), and that inflation (even if repressed) results in permanent dollar shortages unless the price of the dollar is allowed to rise continually along with or ahead of wage-rates. If it is politically disastrous to permit large-scale unemployment and politically impossible to outlaw disequilibrating wage increases, a policy of continual exchange depreciation might be the only alternative to a policy of permanent restrictions or abolition of the market system.[1] Needless to say, assertions about what is politically " disastrous " or " impossible " are matters of political opinion, the validity of which is difficult to judge.

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[1] Where policy *F* is adopted on top of policy *C*, the new supply of dollars may merely allow some previously existing but unsatisfied import demand to be satisfied. The qualification concerning an increase in demand is then not relevant.

[2] The system of " freely fluctuating exchange rates " adopts policy *A* as an automatic regulation of the market balance of payments. Under such a system a dollar shortage in the market sense could not last even for a quarter of an hour. Any gap between supply and demand that threatened to develop at one exchange rate, would immediately be closed by the market finding a rate that would squeeze out the excess demand. Whether the rate fluctuations under such a system would be enormous or moderate would depend on various elasticities, about the size of which we know little. In all systems used in actual practice, several of the policies dealing with an excess demand for exchange are used in combination. Of the two commercial policies, *F* is usually a pious hope, *E*—import barriers—an impious fact. Of the four monetary policies, the gold standard combined policies *B* and *D*—stabilisation and deflation. Most of the systems now in use (*e.g.*, United Kingdom) combine policies *B* and *C*—stabilisation and restrictions. Some systems (*e.g.*, France) combine policies *A*, *B* and *C*—depreciation, temporary stabilisation and restrictions. In at least one case (Italy) we have recently observed a combination of all four types of monetary policy.

7. In contrast to the programme balance of payments, to be discussed presently, it makes no sense to *forecast* the market balance of payments for a future period into which the present market conditions can hardly continue—unless we believe that we know the future market conditions. The market balance of payments refers to a given exchange rate under given conditions of supply and demand. Changes in wage-rates, interest-rates, production costs, consumers tastes, tariffs, fiscal policy, credit policy, capital movements, etc., will alter the market conditions for foreign exchange so significantly that it is nonsense to predict the size of the excess demand for a time a year or two away. Sometimes, perhaps, one may predict that the underlying conditions are likely to change in the near future so as to reduce the gap between supply and demand of dollars that exists at the present exchange rate. Or one may deny that they are likely to change sufficiently to eliminate the gap soon. Or one may try to estimate, nay, guess, the size of depreciation that might suffice to close the gap under given conditions. But a pretence of quantitative precision in forecasts of the market balance of payments cannot be taken seriously.[2]

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[1] A " temporary suspension " of the market mechanism pending certain anticipated improvements of domestic productivity and possible foreign tariff reductions would in fact turn out to be permanent. The alternative policy of countering any excessive wage increases by continual depreciation was apparently what Lord Keynes regarded as most feasible. (See " The Objective of International Price Stability," ECONOMIC JOURNAL, 1943, p. 186.) There is a good chance that the threat of continual depreciation will make trade unions ready to agree on schemes for wage stabilisation (or wage increases in measured steps).

[2] Some of the differences between market balances and programme balances, particularly the difference in predictability, can be clarified by an illustration from another field. The housing shortage in the market sense is sure to continue for a long time if rentals are held at the controlled levels. One may try to guess the increase in rentals sufficient to eliminate the excess demand under given supply and demand conditions. But it is impossible to forecast the amount of excess

II. *The Programme Balance of Payments*

The second concept of a balance of payments does not offer as many difficulties of definition as did the first concept. The definition of the deficit in the dollar balance of payments in the programme sense (or hopes and desires sense) calls merely for enough flexibility to take account of differences in judgment and in objectives.

A dollar deficit in a country's programme balance of payments may be defined as an excess of dollar amounts needed or desired for some specified purposes (assumed to be important with reference to some accepted standards) over the dollar amounts expected to become available from regular sources.

1. The phrase "*needed or desired*" is to emphasise the contrast to the phrase "effectively demanded" that was used in the definition of the market balance of payments. The relevant magnitude in the programme balance is not the effective demand—based on the people's ability to pay—but the "requirements" computed by experts and based on what they regard as the nation's needs or desires. These needs or desires refer to the imports from abroad required to sustain certain levels of domestic consumption and capital formation.

2. The phrase "*for some specified purposes*" need not mean exact import specifications according to detailed blueprints in a comprehensively planned economy, but may refer to global figures put down as targets or forecasts in an aggregative national budget, or even to mere projections of import totals required to supplement domestic output in the achievement of certain levels of consumption and rates of development. Given these levels of consumption and rates of development, given the productive resources available in the country, and given a certain export target, the total import requirement can be deduced by addition and subtraction.

3. The phrase "*with reference to some accepted standards*" indicates that the levels of domestic consumption and the rates of domestic capital formation are, in this context, matters of political judgment. Since the programme is usually submitted in justifica-

demand for next year; although we may be certain that supply conditions will not have changed considerably, demand may be completely different. For example, another round of wage increases under full employment or a reduction in the income tax might easily double the excess demand; or an increase in food prices might cut it in half. The housing shortage in the programme sense, on the other hand, can well be predicted, because the amount of dwelling space which we regard as desirable depends chiefly on the (perhaps) predictable number of families—not on their disposable incomes and on the rentals they must pay.

tion of governmental measures or requests, the objectives must conform to some standards widely accepted as fair and reasonable. With regard to consumption goals, the maintenance of the existing plane of living, or the return to one attained prior to an emergency, will usually be considered as a fair objective; lifting the plane of living will most easily be accepted as a reasonable objective if it can be couched in terms of public health and social security. With regard to capital accumulation, proper goals may include the reconstruction of plant worn or torn by war or other catastrophies, improvement of plant capable of securing quickly an increase in productivity such as to make the nation self-sustaining at a satisfactory living standard or any kind of development work promising to raise consumption from notoriously sub-standard levels. But it will be shown later that the " requirements," in all actual situations, are at least as much a matter of how much foreign finance appears to be obtainable as they are of how much appears to conform to " accepted standards."

4. The phrase "*expected to become available from regular sources*" is to exclude the emergency sources. The foreign finance designed to fill the dollar gap is thus separated from the dollar amounts from more regular sources upon which the programme makers are counting when they estimate the gap that remains to be filled. These, in other words, are the dollar amounts to be received as proceeds from exports of goods and services, and from loans and investments by foreign capitalists if such are safely expected. Whether dollar loans or grants firmly promised by foreign governments are included among the available dollar amounts before calculation of the deficit or, instead, are regarded as parts of the financing provided to meet the " existing " deficit is a matter of taste. There seems to be an inclination to consider foreign loans or grants for " special projects " among the ordinary " transactions supplying foreign exchange," but to put " general-purpose " loans or grants down as " compensatory official financing " sought and obtained in response to an existing deficit in the programme balance of payments.[1]

5. The programme balance of payments is always set up for a definite *period of time*, usually one year, sometimes two, three or four years. In a programme for two or more years it is customary to show declining deficits in successive years in order to emphasise the beneficial effects of the aid to be received in the first year.

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[1] Cf. International Monetary Fund, *Balance of Payments Yearbook, 1938, 1946, 1947.* Washington, 1949, p. 10. On the inconsistencies involved in such procedures see Section III below.

(This definiteness contrasts strongly with the indefinite and probably brief time period to which a given market balance of payments could refer. Every slight change in market conditions, every act of fiscal or monetary policy, might drastically change a deficit in the market balance.) Since the programme is presumably independent of the whims of the markets it is possible to plan a deficit of definite size for one or more years ahead.

6. The existing *foreign-exchange rate* is not as essential for the programme balance as it is for the market balance of payments. The amounts of dollars effectively demanded and supplied will vary if the price of dollars changes; but the amounts of dollars needed or desired for certain national purposes may be entirely independent of the price of the dollar. If the dollar becomes more expensive in terms of domestic currency, people will not be able to buy, on their given incomes, so many things for which dollars are required. But they may still need or desire these things and this is what counts for the dollar deficit in the programme balance of payments. With regard to the programme balance, the foreign-exchange rate may possibly be a factor in the effective steering of productive resources for the attainment of the production and export targets set in the programme. But the more comprehensive the price and allocation controls in the economy, the less relevant will be the foreign-exchange rates.

7. It is in the assumptions about the *level of incomes* that the difference between market balance and programme balance of payments becomes most strikingly apparent. An increase in money and real income will most likely increase a dollar deficit in the market balance, but decrease a dollar deficit in the programme balance. In the market, the dollar gap will be widened at a given exchange rate, because people can buy more and, thus, more goods will be imported and fewer goods made available for export. In the programme, the dollar gap will be narrowed, because people produce more and, thus, fewer goods need be imported and more goods may be made available for export.

8. Six *policies* for dealing with a deficit in the market balance of payments were previously mentioned. Two of them, exchange depreciation and deflation, are of little relevance for the programme balance, because relative prices are not of the essence in judging what the nation needs, desires or can do without. The other policies remain relevant. Import barriers and exchange restrictions are among the main instruments of implementing the programme: only for needed or desirable imports are dollars made available. Exchange stabilisation (in the sense of sales of dollars

out of reserves of the monetary authorities) is often a part of the programme of covering the deficit: the programme may seek foreign loans and grants for the larger portion of the deficit, but draw on the dollar reserves of the nation to finance the rest. In a sense, however, one should really not speak of policies of "dealing" with a deficit in a programme balance of payments. For this is not a deficit which first "exists," and then is "dealt with." Instead, it is a deficit which is programmed when there is a chance to finance it. There is no sense in drawing up a programme balance with a dollar deficit when there is no hope of finding the funds required to carry out the programme. The entire programme is built around the potentialities of finding the foreign finance for the deficit.[1]

9. That the dollar deficit in the programme balance of payments is conditioned by the *financing potentialities* explains our previous remark that the so-called "standards" underlying the nation's requirements are not only flexible but, perhaps, even secondary to the appraisal of the financing potentialities. No matter how fair and reasonable are the standards on the basis of which a country would "need" large amounts of dollars, any programme balance showing a deficit too large to be financed would quickly be revised. Thus, a realistic appraisal of how much foreign finance might possibly be obtainable (from other than "regular" sources) will be the chief determinant of the deficit. This would make the dollar shortage (in the programme sense) merely a function of the financing potentialities. In actual fact, of course, the strength of the case, resting on the validity of the standards, might influence the willingness of other nations to finance a larger deficit and, besides, matters are even more complicated than that because the authorities in most countries constantly confuse in their thinking the programme balance of payments with the market balance. It is chiefly the programme balance by which the economic benefits of a foreign loan can be judged. A loan to finance a persistent deficit in the market balance would be beneficial only if something could be gained by postponing the correction of a fundamental maladjustment of the exchange rate.

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[1] The staff of the International Monetary Fund recognises the planned character of most of the dollar deficits and considers it erroneous to assume "that in some way a deficit develops and financing must then be found for it. . . . Unless it is financed, the deficit cannot come into being." Again, "the monetary authorities engage in compensatory financing of a deficit upon which they have deliberately decided." International Monetary Fund, *Balance of Payments Yearbook, 1938, 1946, 1947*. Washington, 1949, p. 23.

10. Apart from its use in foreign diplomacy and domestic politics the programme balance of payments is a *forecast* of future developments. The forecasting involved in the programme balance makes sense even for periods for which forecasting of a market balance would make no sense. This does not mean that the forecasting will usually be proved correct by the actual developments. Where a nation allows some degree of economic freedom and permits free enterprise to perform some of the international transactions, it may find that some things do not go according to plan, that not all targets are reached, and that the programme must be revised in several respects. Yet, even if the forecasts eventually turn out to be wrong, they often make sense at the time they are made.

As in all forecasting and programming, past experience plays a dominant role in the computation of a programme balance of payments. The figures of past imports and exports are the chief material used by the programme makers, and projections of these figures into the future, with certain revisions up or down, are their most common method. There seems to be a tendency on the part of forecasters to underestimate the pliability of the trade balance in free market economies.[1] This is probably so because many economists underestimate the price elasticities and income elasticities which determine the flows of goods and services in free economies. Another reason may be that they take import figures as an expression not of effective demand but rather of the needs of the nations, and are loathe to programme a significant reduction in imports that would hurt. In any case, while past trade balances are of little relevance in sizing up the market balance of payments, they are important in shaping the programme balance of payments.

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[1] In the forty-eight years from 1867 to 1914 France had import surpluses in forty-four years, and export surpluses only in the four years (1872–75) during which she paid war tributes to Germany. Despite this example of the pliability of the trade balance, John Maynard Keynes in the discussion of the German transfer problem regarded the trade figures as "sticky." When he wrote his famous article on "The German Transfer Problem" (ECONOMIC JOURNAL, 1929) he had only the 1927 trade statistics available. It showed a German import surplus of RM 2,847 million. In 1928 the import surplus was only RM 1,229 million, by 1929 the balance had changed into an export surplus of RM 36 million, and in 1930 and 1931 the export surplus reached RM 1,642 million and RM 2,872 million, respectively. In the years before 1930 the changes were chiefly increases of exports with merely small decreases of imports; during the later years, after the onset of the world depression, the imports fell most drastically. The 1927 imports had been RM 13,801 million, the 1932 imports were RM 4,666 million. It may be said that these drastic changes in the trade balances had undesirable consequences. True enough. But this means merely that quick change may hurt, not that it is difficult to achieve; and that a forecast of a deficit based on past trade figures is in the nature of a programme, not a market balance, with the purpose of avoiding "undesirable" consequences.

The *ex ante* character of the programme balance of payments is self-evident, but to the extent to which hopes are fulfilled and targets attained, the *ex post* record of international transactions may tally with the programme.

III. *The Accounting Balance of Payments*

The third concept of the balance of payments, the statistical record of a country's international transactions in the form of a fully balancing accounting statement, offers difficulties of definition only when it comes to define a deficit or surplus. If for all one-sided international transactions the accountants make offsetting entries on " donations " account, the only possible difference between the totals of credits and debits can be " errors and omissions," reflecting statistical deficiencies, not economic phenomena. Although everybody agrees that the accounting balance of payments " necessarily balances," many choose to present it as showing a surplus or deficit in some meaningful sense.[1]

Thus, *a dollar deficit in a country's accounting balance of payments may be defined as an excess of dollar amounts entered on the debit side of certain accounts in the annual record of its international transactions over the dollar amounts entered on the credit side of the same accounts, the accounts being selected from the full, necessarily balancing statement in order to throw light upon problems connected with market or programme balances of payments.*

1. The phrase " *certain accounts* " serves as recognition of the fact that a complete statement of all accounts cannot possibly show a credit or debit balance, while " certain accounts " can. If these accounts, taken together, show a credit balance, the remaining accounts, taken together, must show a debit balance, and vice versa.

2. The phrase " *debit side* " stands here also for various other captions alternatively used in statements of international transactions, such as " payments," " imports," " passive " and " increase in gold or foreign assets " or " decrease in foreign debts,"

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[1] Cf. International Monetary Fund, *Balance of Payments Yearbook 1938, 1946, 1947* : " The balance of payments of a country necessarily balances. It is a system of double-entry bookkeeping under which total credits equal total debits. There can be no surplus or deficit in the balance of payments as a whole " (p. 4). Nevertheless, " the Fund's staff has endeavored to develop a concept of balance of payments surplus or deficit that would facilitate consideration of the problems of the Fund " (p. 5).

the latter two captions referring to gold and capital movements (provided such items are among the selected ones).

3. The phrase " *international transactions* " does not mean that every single transaction with foreigners is separately entered in the record; net changes in gold holdings and in foreign assets and debts can adequately reflect the net results of all individual transactions on gold and capital accounts.

4. The phrase " *credit side* " stands here also for various other captions alternatively used, such as "receipts," "exports," " active " and " decrease in gold or foreign assets " or " increase in foreign debt."

5. The phrase " *accounts selected* " is intended to reflect the fact that the ideas as to what is a significant selection have varied most widely. For a long time writers stressed only merchandise accounts, and up to this day many concentrate their attention on current accounts (income accounts).[1] Official donations are sometimes excluded, so that transactions on current account consist of goods, services and private donations. Others have felt that long-term capital movements (or at least private long-term capital movements) should be included among the accounts showing the significant balance.[2] This would leave movements of monetary gold and short-term capital (and perhaps official long-term capital movements) as the items offsetting or financing the surplus or deficit. There are several more possible combinations of accounts, separating private and official short-term capital movements, or using other sorts of breakdowns. A "new approach," [3] recently developed by the International Monetary Fund in its search for a " working concept of surplus or deficit in the balance of payments," [4] will be discussed presently.

6. The phrase " *in order to throw light* " indicates the purpose, but not necessarily the result of selecting certain items of the accounting balance of payments to show a credit or debit balance. The light thrown by the balance of chosen items is more often deceptive than helpful, particularly in the analysis of the market balance of payments. Even the most careful selection of items in an accounting statement cannot indicate whether the particular

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[1] Cf. *Report of the ECA Mission to the United Kingdom*, London, 1948, p. 3, where the proposition that " the period from 1930 to 1938 showed a deficit in the balance of payments running at the rate of £27 million per year " refers to the " trade " balance plus " net invisibles."

[2] Cf. International Monetary Fund, *Balance of Payments Yearbook 1938, 1946, 1947*, p. 5, illustrating " the necessity of including private capital movements if the impact of the balance of payments on the exchange problem is to be assessed."

[3] *Yearbook*, p. 24.

[4] *Yearbook*, p. 5.

transactions were "autonomous" or "induced," which is the significant thing in market analysis.[1]

7. On first thought it may appear that no difficult *time problems* are involved in the concept of a deficit in the accounting balance of payments, with all accounts recording *ex post* the transactions that have actually occurred during the year. Unfortunately, this is not so if the accounting balance is supposed to explain the situation in the foreign-exchange market. There may be, within a year, several changes, back and forth, from excess demand to excess supply of foreign exchange, that is, a succession of deficits and surpluses in the market balance of payments. But apart from this, the trade statistics of one year may contain imports or exports prepaid in the previous year or payable in the next year, in amounts not cancelling each other, so that the offsetting short-term capital movements would not reflect any "balance of payments pressures" in the foreign-exchange markets. Many other kinds of peculiar timing constellations may make the accounting balance absolutely irrelevant for any market balance over the year.

8. The accounting balance of payments tells nothing about the relationship between *foreign-exchange rates* and the market balance of payments.[2] Aggregative elasticity studies are absolutely unreliable.

9. The impossibility of using an accounting balance of payments as an *indication of the market balance of payments* can perhaps be better understood by imagining cases of perfect balance in the accounting balance, no matter how the accounts are selected. (*E.g.*, assume a perfect balance of trade, a perfect balance of invisibles and no net movements of monetary gold or

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[1] In an analysis of the foreign-exchange market it is essential to distinguish, for example, between imports which give rise to additional demand for foreign exchange, and imports which are induced by additional supply of foreign exchange. The accounting balance of payments, regardless of the way the accounts are selected, cannot say anything about such problems. All imports are considered as representing a demand for foreign exchange.

[2] Where the exchange rates were kept stable over the years, it is, of course, not possible to learn from actual import figures anything about the exchange-rate elasticities of demand for imports. Where exchange rates changed during a year, the accounting balance of payments for the whole year cannot possibly show the effects of the rate changes. But even if we ever had a clean comparison between two periods (without overlapping anticipations or commitments), with two different exchange rates, we still could not derive the relevant elasticities, because autonomous capital movements and domestic income levels in the two periods may have been very different. For example, while one naturally supposes that a higher price of the dollar would reduce imports into a country, a foreign loan granted to it at the time of the depreciation might enable it to import more rather than less.

capital.) We still could not see from the accounting balance whether the equality of annual exports and imports was achieved : (*a*) by a stable market balance with supply and demand unchanged during the year, (*b*) by a flexible adjustment of exchange rates to changing supply and demand conditions, (*c*) by a flexible adjustment of domestic-income levels by means of fiscal and monetary policies compensating any autonomous influences upon supply and demand for foreign exchange maintained at a stable rate (or by an orthodox gold-standard policy, which, conceivably, might do the same thing), (*d*) by a flexible adjustment of tariffs, subsidies and prohibitions compensating any other influences upon supply and demand for foreign exchange maintained at a stable rate, or (*e*) by suspending the free market, requisitioning all foreign exchange from exporters and rationing it among favoured importers. These are surely very different situations in the foreign-exchange market. Only the first of the five cases of perfect accounting balances may be described as one of a perfect market balance.

10. The thought of using an accounting balance of payments as indication or explanation of difficulties with the market balance of payments is too tempting to be given up lightly. The staff of the International Monetary Fund worked hard to solve this problem. In 1948, they reported progress [1] and, in 1949, success.[2] They admitted that the new concept that they had developed was " still in the experimental stage," and " will undoubtedly be modified " in the process of application. But they considered it " to have reached a sufficiently well-defined stage to assist in analysing problems of international exchange." [3]

The new concept, called *Compensatory Official Financing*, is provisionally defined as "the financing undertaken by the monetary authorities to provide exchange to cover a surplus or deficit in the rest of the balance of payments." [1] It can be said of every single item, or group of items, that it covers a surplus or deficit in the rest of the balance of payments; this is in the nature of any accounting statement. Hence, what this definition apparently tries to single out is those operations which have the sole or primary purpose of providing foreign exchange in response to a situation that has arisen in the foreign-exchange market. The main criteria, therefore, are the *purpose or motive* of the operations and the *stimuli* to which they are supposed to respond. In the analysis of any particular financing operation, the analyst's decision on its purpose should depend on whether the operation would have been undertaken also "for its own sake," that is, even if there had been no excess demand for foreign exchange.[2] And the decision on the stimulus should depend on whether without the financing operation the "balance-of-payments pressures" would have resulted in some serious events in the foreign-exchange market, such as depreciation, additional restriction measures, default on governmental obligations or the like.

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[1] " It is of great importance for the Fund *to know the financial pressures on the monetary authorities* resulting from international transactions and how they are met. In the preparation of the Manual serious consideration was given to the possibility of setting up a final item . . . that would have been entitled ' Official operations to finance a deficit or surplus in the balance of payments.' The deficit or surplus would, by definition, have represented the balance of all transactions other than these official operations, and the official operations themselves would have represented *the response of the monetary authorities to the pressures arising from the balance of payments*. It was decided, however, not to set up an item of this character, because of the difficulty of determining without analysis in each particular case how certain transactions should be classified." International Monetary Fund, *Balance of Payments Manual*, Washington, 1948, p. 8. (Italics are mine.)

[2] " The staff has developed a concept of compensatory official financing . . .," a " concept that would facilitate consideration of the problems of the Fund." International Monetary Fund, *Balance of Payments Yearbook 1938, 1946, 1947*, Washington, 1949, pp. 4-5.

[3] *Yearbook*, p. 5.

In applying the new concept to their statements on the "Financing of International Transactions," the staff of the Fund met with perplexing paradoxes. That they included foreign-exchange transactions of *private* commercial banks of all countries except the United States under the heading of compensatory *official* financing was probably good judgment, inasmuch as most of these banks are merely the lengthened arms of the respective monetary authorities. But the judgment concerning many intergovernmental loans and grants was so poor, I am afraid, as to deprive the new concept of most of its meaning.

U.N.R.R.A. aid, for example, was entered as compensatory financing for the recipient countries, because "it was directed to needy countries that could not make international payment for it out of their own resources." [3] That the recipient countries could not have paid for the U.N.R.R.A. supplies is certainly correct, but irrelevant for the question, because the supplies would not have been bought and, hence, would not have had to be paid for.

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[1] *Yearbook*, p. 5.

[2] "There is a wide range of financing . . . in which it is a matter of interpretation whether or not the operations have been compensatory; the decision in these instances rests upon whether the financing was in response to general balance-of-payments pressures or whether it was for a particular project or other special purpose that would have been financed anyway for its own sake." *Yearbook*, p. 10.

[3] *Yearbook*, p. 11.

The goods were supplied without charge, not because the countries had an excess demand for foreign exchange, but because they had an unsatisfied need for food and other necessary materials; not because there was an excess supply of local currency in the dollar market, but because people were hungry and the production lines were disrupted. If in any of the recipient countries the price of the dollar had been so high, or the holdings of domestic money had been so low, that people could not afford to demand dollars, that is, if there had not been any "pressures" on the market balance of payments, this surely would not have disqualified such a country from receiving U.N.R.R.A. aid. The grants, therefore, cannot be called compensatory of any pressures in the exchange markets.

The same inconsistent application of the new concept was made in the case of E.R.P. loans and grants. Although it was recognised by the staff analysts that "project loans" are not "*compensatory* official financing" but "*special* official financing,"[1] E.R.P. aid, loans as well as grants, were put down as "compensatory." The failure to observe the criteria adopted for the new concept can be appreciated by asking what were the principles of allocating the E.R.P. funds among the recipient countries. The comparative pressures in the foreign-exchange markets? the comparative excess demands for dollars? the comparative need of exchange-rate adjustments? the comparative rigour of exchange controls? None of all these. Not the pressures in the foreign-exchange markets, but the potentials for improvement in the productive use of domestic resources were fundamental guides in the allocation of loans and grants under the E.R.P. programme.[2]

11. We can now diagnose a part of the confusion in the application of the new concept. The balance-of-payments pressures which Compensatory Official Financing is supposed to relieve are, in one place, taken to refer to the market balance and, in another place, to the programme balance of payments. E.R.P. loans or grants are surely compensatory of deficits in the programme balances of the recipient countries, even if they are not compensatory of deficits in their market balances of payments.

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[1] "The development of the project, rather than the development of balance-of-payments deficits, governs disbursements under the [project] loan. A project loan may in fact be extended to a country that is enjoying a balance of payments surplus." *Yearbook*, p. 12.

[2] A critic of this statement has said that the E.R.P. dollars will always relieve the pressures in the foreign exchange market and cover part of an existing dollar deficit in the market balance. Even this need not be true. The E.R.P. funds may be used for purposes for which there was no effective demand before the E.R.P. aid was granted.

But there can be no doubt that problems of the market balance were originally what the designers of the new concept had in mind; they specifically mentioned the "use of the Fund's resources, exchange-rate adjustments and exchange controls" as the problems the consideration of which was to be facilitated by the new concept.[1]

Some of the inconsistencies in the application of the streamlined accounting balance of payments obviously bothered the staff writers of the Fund. This is apparent from the discussion of the differences between balance-of-payments deficits in free exchange markets and in controlled exchange markets. The argument runs as follows: Where the "exchange markets are free and the authorities undertake to maintain a stable rate of exchange," this undertaking "*forces*" the authorities to finance any deficit that should arise. But where the exchange markets are controlled, so that the authorities supply only as much exchange as they wish or are able to afford, they "engage in compensatory financing of a deficit upon which they have *deliberately* decided." Hence, this "planned deficit is different from the unplanned deficit of the free exchange market." But—although the staff writers had stated before that a deficit in the balance of payments can *exist* only if and in so far as it is *financed*—they nevertheless conclude that "in either case," that is, with unplanned or planned deficits, "the amount of compensatory financing is the measure of the extent to which the *existing* balance of payments has *forced* the authorities to take financial action."[2]

At the bottom of these manifest contradictions lies a neat piece of circular reasoning. Originally the idea of the staff was to call compensatory that amount of financing that was designed to provide exchange to cover a balance-of-payments deficit. Now they have ended up with measuring the balance-of-payments deficit by the amount of financing that they choose to call compensatory. This noble accounting balance is not even a distant relation of the market balance of payments. As a matter of fact, the deficit in the market sense, the excess demand for dollars, was defined away when the staff of the Fund assumed that "a country exercising an effective exchange control," by cutting down "its outpayments to whatever it finds to be the level of its international receipts," can "*eliminate the deficit.*"[3] A "dollar deficit," in the sense of this peculiar way of reasoning, is then the amount of dollars made available by monetary authorities—even if the excess demand is much greater—and the amount of dollars made available by foreign governments for general purposes—even if the effective excess demand for dollars in the exchange market is larger, smaller, nil or negative.[1] This arbitrary accounting balance measures nothing but itself.

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[1] *Yearbook*, p. 5. [2] *Yearbook*, p. 23. (All italics are mine.)

[3] *Yearbook*, p. 23. (Italics are mine.)

IV. *Conclusions*

Deficits in the market balance, programme balance and accounting balance of payments mean very different things. A persistent deficit in the *market* balance of payments—an excessive amount of domestic money wanting to be exchanged into foreign money—indicates that the nation's monetary, fiscal and wage policies (and the resulting money incomes and product prices) are incompatible with the foreign-exchange rates. A persistent deficit in the *programme* balance of payments—repeated plans to liquidate foreign assets, to attract foreign investors, to contract foreign debts and to negotiate foreign grants—indicates that programme makers believe foreign funds could be obtained and would materially contribute to the recipient nation's development, improvement of plant, productivity of resources and plane of living. A persistent deficit in the *accounting* balance of payments, with one of the customary selections of accounts, indicates that the nation in the past has been able to live partly on its foreign assets and/or to secure foreign loans or grants.

There is no necessary relationship between these deficits. A country with a deficit in its programme balance of payments may have a surplus in its market balance of payments. This could be the case if the country avoided monetary expansion and overvaluation of its currency, but convinced foreign capitalists or governments that investments, loans or grants would be of mutual benefit. A country with a deficit in the market balance of payments could have a surplus in its programme balance if its currency were overvalued (perhaps after most of the other countries depreciated their currencies) while the high level of its potential rate of income and saving made it advantageous to invest abroad. A country with a deficit in its accounting balance of payments may have even had at the same time a surplus in its market balance if the receipt of the foreign funds had not been preceded by domestic expansion of income and, thus, foreign exchange, with no additional demand for it, had to be sold at depressed prices.

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[1] The actual state of the foreign-exchange market can be judged by mental experiment: by postulating the removal of all allocation and rationing controls and asking what amounts of dollars would have to be sold or bought by the monetary authorities in order to stabilise the exchange rate, and what would happen to the exchange rate in a free market if no dollars were added to or sold out of official reserves. In some European countries the price of the dollar would surely have declined in a free exchange market if the dollars available from ERP aid had been offered for sale. This certainly does not mean that these countries do not need the aid. On the basis of the potential benefits to their economies, their need for this dollar aid—*i.e.*, the deficit in their programme balance of payments—may be more urgent than in the case of countries with large excess demand for dollars.

Under these circumstances, much of the current talk about the dollar shortage makes little sense. A country may have a large effective demand for dollars—if the supply of domestic money is relatively large and the price of the dollar relatively low. This does not indicate the urgency of the need for any dollar aid sought to increase the productivity of the nation's resources and to improve its plane of living. And neither the urgent need nor the effective demand for dollars is indicated by accounting records reflecting past financing operations.

In the evaluation of the benefits of a loan to a nation " suffering from a dollar shortage," its programme balance of payments will be of major significance. For it will indicate what the nation intends to achieve with the aid requested, the consumption levels and the plant improvements that it visualises. The current market balance of payments of such a nation is not so significant in this respect. For if the market deficits are persistent, loans will only postpone the necessary adjustments of relative prices and exchange rates. It is for the evaluation of the usefulness of such adjustments that the deficit in the market balance of payments is most relevant. The connection between the two kinds of dollar shortages is chiefly political. It may be that the improvements in the nation's economy which are to result from the financing of the programme deficit may give its government the political security it needs for carrying out the price and rate adjustments necessarily involved in the elimination of the deficit in the market balance of payments.

In discussions of the equivocal " dollar shortage " we should insist on full identification of the concept employed. We may then discover that many of the existing differences of opinion—in the diagnosis of as well as in the therapy for concrete cases—can be easily resolved, and the rest can be reduced to questions of unknown facts or of irreconcilable political philosophy.

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RISK AND THE COBWEB THEOREM

THE regularly recurring cycles in the production and prices of commodities whose productive process occupies a definite period of time have been studied statistically and theoretically for many years. Their historical existence has been proved by numerous price studies. Their theoretical interpretation had received only scanty attention in the English language, however, until Mordecai Ezekiel in an article entitled " The Cobweb Theorem " [1] composed a concise restatement of the work of several economists who had published their work in German.[2] He drew attention to the importance of their conclusions to the whole fabric of equilibrium economics :—

> " Classical economic theory rests upon the assumption that price and production, if disturbed from their equilibrium, tend to gravitate backward to that normal. The cobweb theory demonstrates that even under *static* (italics mine) conditions, this result will not necessarily follow. On the contrary, prices and production of some commodities might tend to fluctuate indefinitely, or even to diverge further and further from equilibrium." [3]

It is the purpose of this article to refute these conclusions. It will be maintained that they are reached only because an essentially dynamic problem has been analysed with static instruments. The cobweb theorists have failed to take account of the inherent equilibrating force which tends to counteract either " continuous " or " divergent " fluctuations. This equilibrating force is derived from risk and its counterpart speculation.

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[1] Mordecai Ezekiel, " The Cobweb Theorem," *Quarterly Journal of Economics*, February 1938, pp. 255–80; reprinted in *Readings in Business Cycle Theory*, Blakiston 1944, pp. 422–42.

[2] Henry Schultz, *Der Sinn der Statistischen Nachfragen*, Heft 10, Veroffentlichungen der Frankfurter Gesellschaft fur Konjunkturforshung, Kurt Schroeder Verlag, Bonn 1930.

J. Tinbergen, " Bestimmung und Deutung von Angebotskurven, Ein Beispiel," *Zeitschrift fur Nationalokonomie*, Wien, Band 1, Heft 5, 1930, p. 671.

Umberto Ricci, " Die ' Synthetische Ökonomie ' von Henry Ludwell Moore," *Zeitschrift für Nationalokonomie*, Wien, Band 1, Heft 5, 1930, p. 656.

Wassily Leontief, " Verzögerte Angebotsanpassung und Partielles Gleichgewicht," *Zeitschrift für Nationalökonomie*, 1934.

[3] Ezekiel, *op. cit.*, p. 441.

The Influence of Risk on the Supply Schedule

A static analysis of the reaction of producers to price in a *ceteris paribus* situation in which pure competition prevails is normally demonstrated graphically by a single supply schedule. This supply schedule is usually drawn under the assumption that different points on it represent the amounts that will be produced and supplied if the producer expects the price to be at the level indicated when it is time to market his product.

Whenever production occupies a period of time, a producer must always take some risk of the price falling below his expectations. This risk must be considered as a cost just as any other cost of production. The only difference is that it is a cost which varies in large part with the amplitude of previous fluctuations in the price of the commodity. Other factors external to the industry may contribute to uncertainty and risk, but we may assume these to be constant in our particular analysis.

If the estimate of the cost of risk is set by the immediately preceding time series of price fluctuations, then it is evident that there is not one but a series of supply schedules each reflecting the risk cost of a different time series of fluctuations. Only one of these is appropriate for a particular period, but it is important to realise when analysing a problem of producers' response to price changes in successive periods, that different supply schedules will be appropriate for each period. Each successive period will be preceded by a time series of price/quantity fluctuations different from the immediately preceding period. Since the immediately preceding periods in any time series of this type are the most important, the movement of a supply schedule in response to a new interpretation of risks is a matter of some consequence, particularly when the pattern of fluctuations is changing.

It is useful to think of there being one basic supply schedule, a riskless supply schedule from which degrees of risk can be measured. We may quite realistically draw such a schedule under the assumption that the price of the commodity is guaranteed by a Government commodity agency. If a price is guaranteed, the cost of the marketing risk is zero and the supply schedule, at least in its upper reaches, would lie to the right of any supply schedule to which the cost of risk had been added. To the left of this schedule lie a series of schedules drawn under different assumptions of the risk involved in producing various quantities of the commodity in question.

It must also be recognised that there is a different series of supply schedules rising from the same riskless schedule depending on the level of the long-term equilibrium price around which the fluctuations had been taking place. It is reasonable to assume for example, that, other things being equal, more wheat would be produced at \$2.00 per bushel if the weighted average price for the preceding ten years had been \$3.00 and the price had fluctuated regularly between \$2.00 and \$4.00, than would be produced if the weighted average price were \$1.50 with regular fluctuations between \$1.00 and \$2.00—even though the price in both cases was expected to remain at \$2.00.

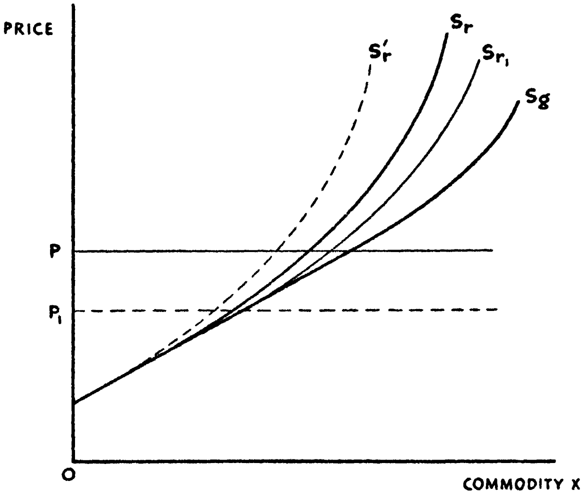

FIG. 1

The supply schedules may be plotted as shown in Fig. 1. *Sg* is the riskless supply schedule which shows the amounts of commodity x that would be supplied per period if the price were guaranteed. *Sr* indicates a position of the supply schedule if the weighted average price over a representative period had been p and the average fluctuations had been, let us say, $p + 20\%$ to $p - 20\%$. Sr_1 and the rest of the *Sr* series (not plotted) show the appropriate supply schedules on the assumptions of the same weighted average price but of different amplitudes of price fluctuations. If the weighted average price over a representative period had been p_1 instead of p, a different series of supply schedules, Sr^1, would be appropriate. Sr^1, for example, might represent the appropriate supply schedule if the average amplitude of fluctuations had been $p_1 + 20\%$ to $p_1 - 20\%$.

The *Sr* schedules are always less elastic than the guaranteed schedule, their elasticity decreasing as risk increases. Other things being equal, they are likely to become extremely inelastic at very high prices which are well beyond the average fluctuations. At these prices the producer, even though he may not have reason to *expect* a lower price, nevertheless recognises that the risk of a lower price is increased. Extra capital expenditures which could be justified if the higher price were guaranteed or regarded as reasonably stable might be curtailed.

At relatively low prices the *Sr* schedule would tend to become colinear with the *Sg* schedule unless a certain amount of speculative production were undertaken at low prices. If this were so the *Sr* schedule might cut the *Sg* schedule and become inelastic at very low prices which are beyond the range of average fluctuations.

The Influence of Speculation on the Demand Schedule

The influence of risk on the demand schedule must be treated in a somewhat different manner. It is the regulating force which, in a period of fluctuating prices, decides the extent to which investors are willing to accumulate or sell stocks of the commodity in question in order to make a speculative profit or prevent a loss. This speculation, of course, depends on the storability of the commodity. If there is no possibility of a price change, *i.e.*, if a commodity agency guarantees a definite price, then there is no possibility of making a speculative profit. A non-speculative demand schedule such as *Dg* in Fig. 2 shows the amounts that would be demanded per period at different prices for current consumption or non-speculative storage by purchasers who are assured that they will be able to acquire as much of commodity x as they may wish in the future at the price that prevails in the current period.

If the price is not guaranteed and if the commodity is storable, the appropriate demand schedule will not be *Dg*, but some other schedule which, in general, lies to the right of *Dg* below the normal price, to the left of *Dg* above the normal price and is more elastic throughout its length. This excess demand at low prices represents the demand for speculative storage, while the restricted demand at high prices represents the unloading of speculative stocks.

These speculative-demand schedules depend on the expectations of future prices which tend to be strongly influenced by previous prices and trends. As in the case of the *Sr* schedules, there will be a family of speculative demand schedules for each long-term price as shown by the weighted average price for a representative preceding period. Within each family there will be an infinite series of demand schedules each representing a different historical time series of price/quantity fluctuations, and each tempered by a unique forecast of future trends.

Only one of these schedules is appropriate for a particular period, but in analysing a problem of speculators' response to price changes in successive periods it is important to realise that different demand schedules will be appropriate for each period. This is so even though we may assume that factors affecting expectations which are external to the industry are constant, because speculators are influenced to a great extent by the time series of price fluctuations and as each succeeding period will be preceded by a time series different from the immediately preceding period (by the addition of the previous periods fluctuations), the speculative schedules will shift. As in the case of the supply schedule, and in particular when the pattern of fluctuations is changing, the immediately preceding periods of any time series of this type are the most important.

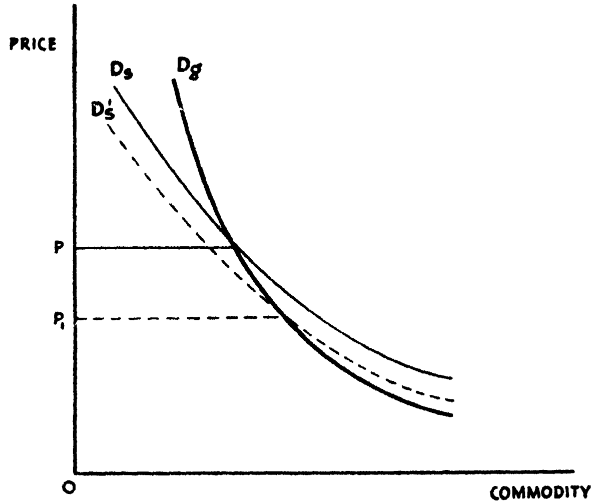

FIG. 2

In Fig. 2 *Dg* represents the non-speculative-demand schedule which corresponds to the riskless supply schedule in Fig. 1. *Ds* represents the speculative-demand schedule for one time series of price/quantity fluctuations around the normal price p, and is thus representative of a series. If the normal price is p_1 there will be another series D_s^1, each of whose member schedules will reflect a different historical price/quantity time series tempered by future expectations.

Statics and Time

Static equilibrium theory in its most simplified form states that if the supply and demand schedules for a certain commodity are given and assumed not to shift, then the normal or "long-term" price which will equate supply and demand will be determined by the intersection of these schedules. If there were any accidental movement away from the point of equilibrium, market forces would instantly restore it.

The question at once arises: what are the assumptions (besides the usual *ceteris paribus* assumptions) under which these static schedules are drawn? The answer in the case of pure statics is that the schedules are non-speculative and riskless, for if we assume instantaneous adjustments, risk presumably disappears as does the possibility for speculation. Thus, as long as instantaneous adjustments can be made, *i.e.*, as long as production does not occupy a definite interval of time, the intersection of the schedules we have tagged *Dg* and *Sg* will represent the position of normal equilibrium.

When the production period does occupy a definite period of time, the normal equilibrium is still determined by the intersection of the riskless and non-speculative schedules and may be considered independent of the path by which it is reached. However, the path is not independent of its preceding parts. The path toward equilibrium or about a point of equilibrium cannot be shown by "carrying successive production, price, and production readjustments back and forth"[1] between either the riskless and non-speculative schedules or between a single pair of schedules which reflect a unique risk and speculative situation. Yet this is what cobweb theorists do.

Restatement of the Cobweb Theorem

The simple cobweb theorem is usually described under the following assumptions:—

1. The demand and supply schedules are assumed not to move. (We may add the further interim assumption that the schedules concerned are riskless and non-speculative schedules though it is inconsistent to speak of movement along such schedules; *i.e.*, only one point on each schedule is valid for a given succession of time periods.)

2. The time needed for production to respond to a price change is at least one period.

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[1] Ezekiel, *op. cit.*, p. 423.

3. Price in any period is set by the supply currently available.
4. Production is completely determined by producers' response to price under conditions of pure competition.
5. Finally, we must assume that by some misadventure either a larger or a smaller quantity than the normal equilibrium quantity is available in the initial period.

In Figs. 3, 4 and 5 pairs of intersecting demand and supply schedules are plotted. In Fig. 3 the demand and supply schedule are of equal elasticity. In Fig. 4 the demand schedule is more elastic than the supply schedule, and in Fig. 5 the supply schedule is more elastic than the demand schedule. In all cases Q_1 is the quantity available for sale in the first period.

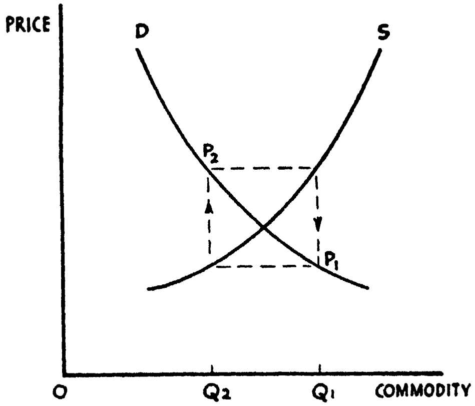

FIG. 3

In the first period the quantity Q_1 will give rise to the price P_1. The price P_1 will call forth a relatively smaller supply, Q_2, which will be available for market in the second period. This small supply will give rise to a higher price, P_2, which will stimulate a relatively large quantity, Q_3, which will be available for market in the third period, and so the process continues in a cobweb pattern, the design of which is prescribed by the relative elasticities of the demand and supply schedules.

If the demand and supply schedules are of equal elasticity as in Fig. 3, the supply that is called forth in the third period, Q_3, will be equal to the supply in the initial period, Q_1. When this occurs the price in the third period will also equal the price in the first, and the production and price will continue to fluctuate in future periods between Q_1 and Q_2 and P_1 and P_2 respectively in a *continuous* pattern without an equilibrium being approached or reached.

When the demand schedule is more elastic than the supply schedule as in Fig. 4, the fluctuations of price and quantity are reduced from period to period and the normal equilibrium price and quantity are approached and finally reached. The path of these fluctuations is shown by the *convergent* cobweb plotted in the figure.

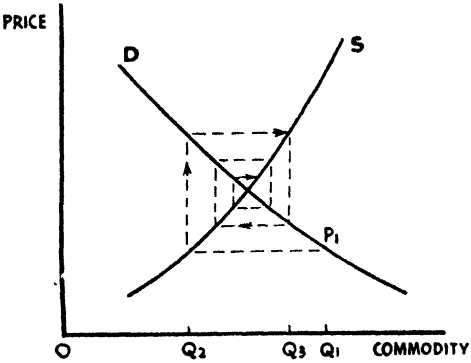

FIG. 4

When the supply schedule is more elastic than the demand schedule as in Fig. 5, the results are reversed. The fluctuations of price and quantity increase from period to period as shown by the *divergent* cobweb. Ezekiel concludes that "under these conditions the situation might continue to grow more and more unstable, until price fell to absolute zero, or production was completely abandoned or a limit was reached to available resources (where the elasticity of supply would change) so that production could no longer expand."[1]

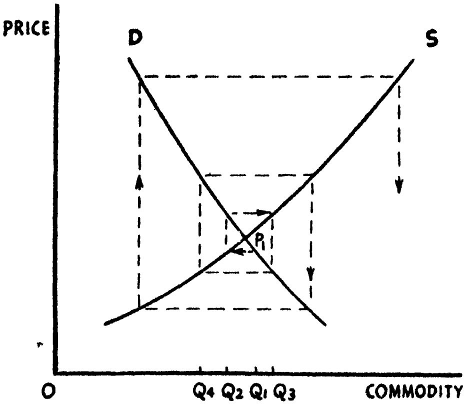

FIG. 5

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[1] Ezekiel, *op. cit.*, p. 432.

The Influence of Risk and Speculation on the Cobweb Theorem

The fallacy of these conclusions lies in the introduction of periods of time to a static analysis while failing to introduce all the consequences of time. While it is perfectly in order to assume that objective costs of production and consumers' effective demand (and thus normal equilibrium) remain constant for a series of time periods, it is inconsistent to describe a time series of price fluctuations and at the same time ignore the influence of these fluctuations on risk and speculation, and their consequent influence on the elasticities of the short run demand and supply schedules.

Fig. 6 gives a very simplified graphical version of the influence of risk and speculation on the cobweb pattern. *Dg* and *Sg* are respectively identical to *D* and *S* in Fig. 5. Also the initial quantity Q_1 is the same for both figures. If it were not for the risk and speculation engendered by the fluctuations, the divergent cobweb pattern would be identical with that of Fig. 5. However, the series of increasing price and quantity fluctuations has the inevitable effect of increasing the marketing risks to the producer and decreasing the elasticity of the supply schedule. Similarly, the increasing fluctuations make possible a speculation in stocks of the commodity, more new production being demanded at lower prices and less at higher prices. The effect of this speculative activity is to increase the elasticity of the demand schedule. Thus, the effect of risk and speculation is to tend to change continuous and divergent cobwebs into convergent cobwebs, and to make convergent cobwebs converge more quickly.

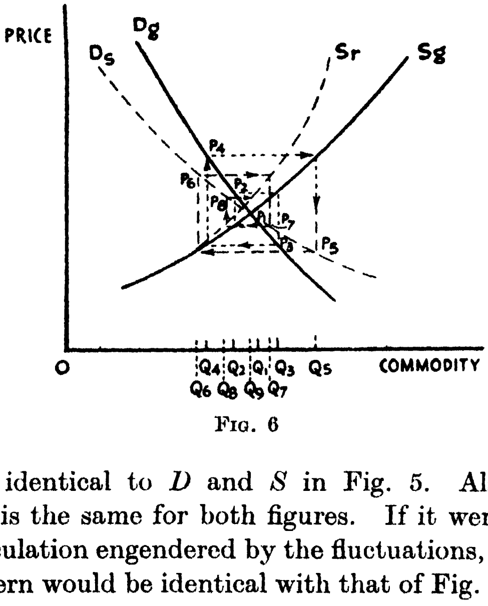

FIG. 6

In Fig. 6 it has been found advisable for reasons of draftsmanship to draw only one supply schedule including risk and one speculative-demand schedule. These represent one particular series of fluctuations tempered by expectations and are appropriate to only one period (the fifth), but they enable us to see the effects of changed elasticities on a divergent cobweb system. Let us assume that the risk and speculative effects do not occur until the fifth period. Thus, the dotted cobweb pattern shown in Fig. 6 will diverge until the demand and supply schedules respond to the increased fluctuations and move to the new positions *Sr* and *Ds*. Since *Ds* is now more elastic than *Sr*, the fluctuations will tend to decrease and the cobweb will converge towards the normal equilibrium point as shown by the cobweb pattern in long dashes.

It is uncertain whether the normal equilibrium point would ultimately be reached. As the fluctuations decrease there would be a tendency for risk and speculation to decline, thus increasing the elasticity of the supply schedule and decreasing that of the demand schedule. If the net result was to make the supply schedule more elastic than the demand schedule, the cobweb would begin to diverge again. If, on the other hand, the net result left the demand schedule more elastic than the supply schedule, the price and quantity would approach and finally reach the point of normal equilibrium.

It is difficult to make any judgment as to what would be the net result or to define in useful terms the conditions under which the normal equilibrium would be reached and preserved. If no extraneous forces intervened, and risks and speculation were affected entirely by the time series of fluctuations, it is reasonable to suppose that the normal equilibrium point would be reached and preserved. In a dynamic analysis, however, it is not essential that all industries are *exactly* at their normal point, since schedules in the real world are constantly shifting in response to many factors apart from the restricted marketing risks with which we have been dealing. What is important is that there should be a force which will keep the fluctuations from diverging from a point of equilibrium or even from maintaining a constant fluctuation around the equilibrium point. We have shown that there is such a force and that, in general, the theory of economic equilibriums is vindicated.

The pattern of a time series derived from a cobweb based on schedules which almost certainly shift from period to period around a point of constant normal equilibrium can only be drawn descriptively unless some definite causal connection in quantitative terms can be shown between the previous time series and the extent of schedule movement. Since risk and speculation are subjective interpretations of objective data, it is not possible to make any unique causal connection of this type. We might expect, however, that the cobweb would alternatively diverge and converge at an average distance from normal equilibrium which is directly proportional to the responsiveness of the producer and speculator to the increase or decrease of risk.

It may appear inconsistent that we should assume, as Ezekiel does,[1] that while producers decide their production on the expectation that current price will not change, speculators manipulate their stocks on the expectation that price will change. There are two reasons why this is possible : first, producers of commodities which are sold in a perfectly competitive market are usually less acquainted with market forecasts than speculators, and consequently are more likely to produce on the basis of the current price (with an allowance for risk) for want of a better guide. Secondly, it is possible for the producer and speculator both to estimate at the time of planting, that the current price will continue. During the time-occupying period of production, however, price expectations may alter due to the weather, the acreage planted and other factors. If planting has already been done, there is little the producer can do to change supply without worsening his position, but the speculator has a free hand in acquiring or selling stocks at the current price.

If the producer is assumed to expect a different price to prevail when he markets his product to that which prevails when he commences production and if he acts in accordance with his expectations, the effect will be to reinforce the movement toward normal equilibrium *if his expectations are correct* (unless the change in production is so drastic as to increase the disequilibrium in the opposite direction to the current disequilibrium). *If the producer's expectations are incorrect,* a greater disequilibrium in the same direction invariably results.

Other factors than risk tend to make the short-term supply schedule less elastic than the long-term schedule. It is often technically impossible to increase production quickly. New capital takes time to install, new workers require training, and until they are trained the short-term costs of increased production are higher than the long-term costs. Also the transfer cost of new factors often adds an extra charge to new production. All these factors would tend to reinforce the tendency of the cobweb to converge as soon as a divergent tendency surpassed the limits of customary fluctuations.

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[1] Although Ezekiel shows in detail how speculative storage may affect the supply or demand schedules he does not take any account of the effect of the fluctuations he is describing on the propensity to speculate. *Op. cit.*, p. 427.

We may conclude that the cobweb theorem must now lose some of its sensational claims. For commodities whose production occupies a definite time period we may still illustrate dynamic changes of price and quantity about a point of normal equilibrium in cobweb fashion, but we must make allowances for the movement of the demand and supply schedules in response to changes in marketing risk. We have shown that divergent and continuous cobwebs describe situations which are possible only if we ignore the influence of dynamic fluctuations on risk and speculation and, through them, on the elasticities of the demand and supply schedules. The fact that the classical cobweb theorists have concluded that divergent and continuous cobweb fluctuations *are* possible can be explained by their attempt to use a static analytical technique to explain an essentially dynamic phenomenon without taking sufficient care to adapt the tools of analysis to the problem in hand.

Finally, it is of great importance to record the effect of guaranteeing a minimum price for a commodity. By reducing risk the cost of production is decreased and the supply schedule is inevitably shifted to the right. This is a fact which must be taken into consideration when analysing the effects of various types of commodity control in which guaranteed prices play a part.

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Oxford.

SOVIET PLANNING AND THE PRICE MECHANISM[1]

I

IN his recent book *Planning and the Price Mechanism* Professor Meade has contrasted a system of planning without prices with one incorporating "the controlled use of the money and price mechanism." The economy of the Soviet Union undoubtedly fits his definition of the former,[2] but the part played by the price mechanism in this totally planned system has been, since the beginning of 1949, significantly revised. An examination of the pricing structure of the Soviet system would repay study not only as an academic exercise but also as a comparative analysis with other price mechanisms. Soviet emphasis upon *Khozrashchyot* or cost accounting is well known,[3] but there has been a tendency in dealing with the broader aspects of the price mechanism to ascribe to it a lower importance than Soviet statements and practice justify.

The price mechanism properly so-called may be said to have two functions. First, it must represent an internally consistent criterion of relative costs. In competitive capitalism, this is automatic, but in a planned economy the structure may be, and in the U.S.S.R. was, maladjusted and, being rigid, remained so. The second function has two interacting features inseparable from each other: prices guide consumption and allow the preference of consumption to guide the allocation of resources. Under capitalism the prices themselves are the mechanism for promoting the flow of resources as effective consumer demand desires and consumers adjust their purchases according to the price of the desired commodity. Here a planned economy clearly differs. It may be argued that, since the determination of priorities is affected by criteria outside and unaffected by the price mechanism (viz., by the planning authorities), this second function is absent. This is, however, strictly true only of an economic autocracy in which planning is rightly quantitative. An economic autocracy neither presumes the existence of, nor is the product of, any particular political system, but it is certain that Soviet authorities in the 'twenties conceived a planned economy as such. Since the inception of the first five-year plan, this attitude has altered fundamentally, and the reform of January 1949 gives effect to the change by adjusting the price structure.

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[1] The collaboration, in the preparation of this paper, of one of my colleagues and the comments of Mr. John Nicholson (formerly with the writer at King's College, Cambridge) are recorded with appreciation.

[2] "The formulation of a State Plan giving quantitative targets for the output of each industry of any importance and for the use by these various industries of all the factors of production of any importance . . . implemented by a series of State controls." P. 5.

[3] Cf., for example, M. Dobb, *Soviet Economic Development since 1917*, Ch. 14.

Present Soviet methods of planning and the extent to which use is made of prices may be briefly described. Planning is certainly quantitative and the plan drawn up on the basis of reports of available and potential resources prepared at the unit level of the economy. The broad strategy of development (*e.g.*, divisions between consumption and investment, between emphasis on heavy and on light industry) are conceived in the general perspective within which the plan is to be detailed. Upon the basis of the general strategy for the five years, separate plans, enterprise by enterprise and year by year, are constructed. Each enterprise will be informed of the magnitude of its target. The enterprise will then prepare its plan and estimate the cost in roubles of that output according to the pattern of the intake of resources it proposes. If it takes raw materials from, for example, a distant source or from a high-cost producer or of a special grade, its estimated costs may be higher than the planning staff were prepared to authorise, and it may be told to alter its intake or output. If the product of the enterprise is sufficiently important, its price may be raised to enable the enterprise to pay a higher price for materials, etc. If the raw material, for example, is a special grade best used by the sort of enterprise in question, then the price of that grade may be deliberately high so that only worthwhile producers will be able to purchase it.[1] Thus the preference of the industrial consumer is made effective through a price mechanism designed to reflect those preferences. Consumption by enterprises is, by the same token, guided by price structure. In a capitalist economy the preferences of industrial consumers would be the derived demands of the aggregate of individual consumers. The theory of Soviet planning, on the other hand, is that consumers, in their capacity as the electors of the deputies who vote the law of the five-year plan, abrogate their rights to alter priorities by such influence. Nevertheless, when a demand for a particular good is manifest, that good may, in Soviet practice, either have its price raised in relation to other goods (a procedure often effected during a general price reduction by lowering its price less than those of other goods) or more is produced and sold at the same price, both normal alternative results under a free-price mechanism. In either way the aggregate of purchasing power directed towards the demanded commodity enables the producing enterprise to give effect to the preference in the ensuing planning period, the minimum planning period being usually a quarter year. Obviously the planning authorities must occur in this re-alignment of priorities because they could block any quantitative changes in output, but given the free disposal of consumer income and the need to maintain labour incentives, concurrence would not be withheld except for serious reasons, *e.g.*, where it would absorb a material in short supply required by a high-priority industry. The pressure of consumer purchasing power cannot change the broad balance of consumption (*e.g.*, with capital formation) because the aggregate of consumer demand is *a priori* determined (cf. Section II below).

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[1] Cf. quotation from *Ugol* specified in footnote 3 on p. 90.

Until 1949 the price structure, that is the mutual relationship of separate prices, was not deliberately constructed to play a positive role in accordance with either of the functions distinguished above. For the first function, prices were not internally consistent and for the second, the structure was such that priorities and preferences were not correctly reflected : in fact, the price structure exerted a negative influence on the required flow of goods and services.

A Soviet economist [1] has recently gone so far as to say that prices are the " key to all planning in the U.S.S.R.," a far cry from the earlier Soviet economists [2] who had spoken of the need of " freeing Soviet prices from a value basis " and others still earlier who saw no use in any price mechanism. Clearly the early Soviet attempts at planning, the " control figures " of 1925/26 and 1926/27, showed how difficult was the task of quantitative planning under uncertain prices, and the adoption of full-scale planning in 1927 was based on rigid prices (those of 1926/27 being taken as this base). The limitations of a " neutral " price structure and the unsuitability of 1926/27 prices became gradually apparent, and after 1936, when economic development had reached the stage that the decision was taken to abolish subsidies to high cost enterprises, proposals were made for adjusting the price structure,[3] but for various reasons, including the War, it was not

[1] Sorokin, " Planning in the Soviet Economy," *Bolshevik* No. 24, December 1949, p. 12 et seq.

[2] Notkin and Tsaglov quoted by M. Dobb, *op. cit.*, 334, n. (3).

[3] Cf. A.I. Rotshtein, *Problemy Promyshlennoi Statistiki S.S.S.R.* (Problems of Industrial Statistics in the U.S.S.R.) Books 1 & 2 (Moscow, 1936 and 1938).

until the beginning of 1949 that a new and accurately functional price mechanism was introduced. The new structure has, first, eliminated the disproportion introduced by continuing to measure quantities in terms of a structure of real production costs long inoperative and progressively more out of line with improving standards of real efficiency. Secondly, it has for the first time in Soviet planning been consciously organised as a positive mechanism. It has at last been realised that prices need to reflect, by their internal relationship, that order of priorities laid down in the quantitative plan, and thus contribute actively to the working of the economy.

II

Before the change was made, on January 1, 1949, there were three categories of planning prices [1] :—

(*a*) constant 1926/27 prices;
(*b*) official fixed prices;
(*c*) current planning prices, with which are linked planned works costs.

These prices must be clearly distinguished from the retail consumer-goods prices fixed by the State [2] which aim at price levels interlocking the aggregate of supplies made available for consumption and the planned volume of money (less estimated savings) accruing to private consumers within the given planned period. Between these prices on the civilian consumption side of the national economy and the planned prices in industrial production here considered, there is no immediate link, although ultimately in the interests of simplification of controls and planning devices these two main sets of prices are kept generally in step.[3]

The constant 1926/27 prices were of prime importance, for, according to recent Soviet economic writers,[1] they were used in calculating general indices of industrial production as well as of the output of the individual enterprise or group of enterprises; fulfilment of ministerial production plans and those of their subordinate organisations; general and individual *Kolkhoz* output figures; indices of labour productivity and indices of industrial costs of production. One of these economists, Marshev, makes it clear that all these figures were calculated by pricing each item at 1926/27 prices and not by employing a general conversion factor of any kind. For " new " commodities first manufactured after October 1927 " assimilated prices " were fixed *ad hoc* : some were calculated by applying a conversion factor to the planning prices for new commodities current in the initial production period; others represented simply the initial production cost price. By 1948, especially in such industries as engineering and chemicals, a fairly large proportion of so-called constant 1926/27 prices were, in fact, post-1927 assimilated prices.

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[1] A certain confusion has been introduced among English-speaking economists studying the U.S.S.R. by the use of conflicting translations for standard Russian terms. The classification here is a translation of : (a) *Neizmennye tseny 1926/27g.*; (b) *Otpusknye tseny* (or *optovye tseny* owing to some looseness in Soviet usage); (c) *Planovye tseny*.

[2] With the exception of *kolkohz* prices which, Sorokin (*loc. cit.*, p. 26) explains are decisively influenced by the level of prices of industrial goods, which are traded in exchange for farm produce as well as by the parallel system of State trade in the farm produce itself.

[3] The financial difference between the two sets of prices is absorbed in the Turnover Tax, the methods of which are fully described in L. E. Hubbard, *Soviet Money and Finance*, pp. 138 *et seq.*; Dobb, *op cit.*, pp. 360 *et seq.*; and A. Baykov : *The Development of the Soviet Economic System*, pp. 367 *et seq.*

Of hardly less importance were the official fixed prices or accounting prices fixed by the State as the operative delivery prices between enterprises and groups of enterprises for industrial goods moving forward in the course of industrial processing. Marshev makes it clear that these prices were quite distinct from, and considerably at variance with, so-called constant 1926/27 prices. They were apparently reviewed at frequent intervals, perhaps yearly, for, dealing with the oil industry, Marshev refers to " official fixed prices for 1948."

The scale of government subsidies to industry seems to indicate that " official fixed prices " or " accounting prices " were after June 1941 kept well below the general level of prices postulated by the degree of inflation, reflected in officially fixed retail prices and wage-rates and arising from the note and credit expansion to cover wartime expenditure. It would, none the less, be unwise to assume that there were no interim upward adjustments, and, indeed, the existence of a specific set of " accounting prices for 1948 " in the oil industry, although not conclusive, certainly suggests the possibility of adjustments in implementation of policy.

The third category of planning prices are known as current planning prices, with which are linked planned works costs. Although notionally a separate category, they are closely linked with accounting prices, and would in all likelihood be identical or nearly so but for State subsidies. Marshėv, dealing with the oil industry, refers to " 1947 works costs " which, in the example quoted by him, were very greatly at variance, both in level and structure, with corresponding 1948 " accounting prices." As far as the difference in level is concerned it must be borne in mind that the latter were for 1948 and not 1947, although this does not seem likely to account for anything like the whole of the difference between the two sets of prices.

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[1] A. I. Rotshtein, *op. cit.*, Book 3 (1947); an article by S. V. Marshev in *Heftianoe Khoziaistve* (*Oil Industry*), No. 12, 1948, and an article in *Sotsialisticheakoe Selakoe Khoziaistve* (*Socialist Agriculture*), No. 11, 1948.

Current planning prices are employed for the calculation of the planned volume of investment in the national economy, since this is directly financed from the State Budget, the plan for which is more conveniently drawn up in current prices than in 1926/27 prices. In consequence, the planned volume of investment in the second five-year plan (1933–37) was based on " 1933 prices," in the third five-year plan (1938–42) on " 1936 prices " and in the fourth five-year plan (1946–50) on " 1945 prices."

III

The constant 1926/27 planning prices, in terms of which plan fulfilment was calculated, became in effect the key price structure. The gradual increase in the efficiency of utilisation of productive resources, and the large number of new commodities coming into production, led to increasing divergency between the structure of real costs of production implicit in the original prices in the 1926/27 list and the existing structure at subsequent stages of economic development. The problem had two aspects :—

> (*a*) The uneven over-valuation of the " original " 1926/27 prices did not reflect subsequent changes in relative real costs as a result of increasing efficiency of utilisation of productive resources. The planning prices in consequence tacitly assumed that relative real costs of production in subsequent years remained at the 1927 proportions, and as a result gave a greatly inflated value to output priced in constant 1926/27 prices.[1]

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[1] Some concept of the over-valuation of industrial items compared to agricultural may be seen from the relation of production at these prices at either end of one five-year period (*Sotsialisticheskoe Stroitelstvo S.S.S.R. 1936—Socialist Construction of the U.S.S.R.*—p. xxxii).

	1930.	1935.
Industrial products (1926/27 roubles) . .	14·8	34·2
Agricultural products ,, ,, . .	8·7	10·5

This disproportion increased year by year, and was also marked as between industrial products. By 1937 the disproportion was still more marked and

> (*b*) The over-valuation of prices in the group of prices assimilated to the 1926/27 prices. Prices in this group tended, it seems, to be brought into use at initial stages of production of " new " commodities before increasing efficiency had brought production prices down to the efficiency level at that stage of productive technique.

Many Soviet economists writing in *Plan* and *Planovoe Khoziaistve* before the War and A. I. Rotshtein in *Problemy Promyshlennoi Statistiki S.S.S.R.* (Books 1 and 2) drew attention to the imperfections of the constant 1926/27 prices. They made, however, no references to the actual extent of over-valuation of output or fulfilment of plan or the degree of error introduced into the calculation of various indices, and they shirked the task of dealing radically with the problem by replacing 1926/27 prices by a more satisfactory and homogeneous set of planning prices. The planners may have felt that, replacement of the 1926/27 prices during the Second and Third Five-Year Plans would have been only temporarily effective, with the new prices soon falling out of line, albeit to a lesser degree, in view of the relatively great and frequent changes in the structure of real costs of production as a result of the efficiency drive against the initially low levels obtaining in industry in general, the relatively rapid introduction of machinery where very little had been in use before and the continual introduction of new productive processes.

Another shortcoming of the 1926/27 prices which cannot have escaped attention, although it does not appear to have been brought into open discussion, is what may be termed their " planning bias." The original 1926/27 prices and the subsequent assimilated prices were simple planning prices and not

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Naum Jasny (" Intricacies of Russian National Income Indexes," *Journal of Political Economy*, August 1947) has commented : --

> " The officially computed relationships between industry and agriculture in 1937—from 77·4 : 22·6 in output and from 50·9 : 14·9 in contribution towards national income—are absurd for a country in which more than half of the population is still engaged in agriculture. These relationships are obviously the result of the great over-evaluation of the 1937 industrial production."

and has calculated the proportions of 1927/28 Soviet National Income as showing the following divergence when calculated in different prices :—

	At pre-1914 prices.	At 1926/27 prices.
Agriculture	43·3	36·3
Industry	24·4	26·9
Non-rural construction	2·2	4·4
Communications	3·9	4·8
Trade	12·3	11·6

differential planning prices reflecting differential emphases in the plan.

Soviet planners learnt, as each successive Five-Year Plan added to their experience, that behind nominal fulfilment of overall plans would most often be hidden a great degree of uneven fulfilment in its manifold constituents, and this must have directed their attention to differential planning prices which would place emphasis in the fulfilment of these constituent plans upon priority aspects of the overall plan. The 1926/27 prices which had started without any initial directional bias and had gradually developed an unplanned bias were the cause, at least in one industry as Marshev's article shows, of a very specific set of distortions in planning.

Before it was felt possible to replace the 1926/27 prices, however, war had broken out, and for the time being all reference to the shortcomings of planning prices, greatly accentuated though they were by the War, ceased. The matter was not taken up again in open discussion, although it can hardly have been overlooked by the planning economists, until the appearance in 1948 of Volume 3 of A. I. Rotshtein's book.[1] There was, however, no suggestion of replacing 1926/27 prices, and it is noteworthy that, writing towards the end of 1948 after the resolution of the Soviet of Ministers replacing the 1926/27 prices had already been passed, Marshev refers to special " corrected " 1926/27 prices in which the most serious of the shortcomings mentioned above had been largely eliminated. It is difficult to escape the conclusion that until a relatively late date the planning authorities had not entirely abandoned the idea of retaining 1926/27 prices in a new " corrected " form.[2]

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[1] *op. cit.*, pp. 60 ff.

[2] Marshev quotes a table of prices for refined petroleum products which reveals the significant differences between the sets of prices, given as percentages of prices for light products (*e.g.*, motor spirit, etc.).

Product.	1926/27 prices.	1948 accounting prices.	1947 current plan prices.	1948 new corrected prices.
Light products	100	100	100	100
Petroleum coke I	124	33	11	40
Petroleum coke II	124	33	6	11
Fuel oil	17	16	6	15
Gas	30	2	2	11
Varnish	41	21	7	17
Polymers	1	9	3	15

The table shows remarkable variations: in 1926/27 prices petroleum coke was grossly over-valued and polymers grossly under-valued. It may be concluded that, at the earlier date, the demand for the former for electrical equipment was larger than the supply : now, the supply of coke fills this need and commands only its price as fuel. Conversely, in 1926/27 polymers were useless residues : now, they have become valuable for blending with motor spirit.

The significance of the deleterious role played by an unsuitable price structure can be clearly seen : indices of production and labour productivity [1] are distorted, and as plan fulfilment was measured in these prices :—

> " It becomes better business to over-fulfil plans for secondary and over-priced, but actually less expensive, categories of output so as to overfulfil the overall sales plan calculated in 1948 accounting prices." [2]

This last problem posed by the price distortion was resolved not only by the price reform but also by a special decision of the Council of Ministers which stated that " the production plan will be considered fulfilled only in the event that it is fulfilled not only for quantity but also as regards the established assortment and quality of the goods." [3]

Clearly price reform was required in this connection, as it was in abolishing State subsidies (which are to be eliminated by 1950), and generally was needed to establish a sound and smoothly functioning economy.

IV

The fundamental price reform was announced in general terms in March 1949, but earlier notice had been made of it in the *Journal of the Institute of Economics of the Soviet Academy of Sciences*,[4] where it was stated,

> " In connection with the tasks of greater emphasis on economic factors and cost accounting in post-war conditions, great importance must be attached to changes brought about in the sphere of planning and cost accounting and, in particular, to the switchover from calculation of gross output and labour productivity in 1926/27 prices to calculation in the new accounting prices.[5] . . . The new accounting prices (for metals, fuel, electricity, thermal power, timber, cement, bricks and new railway freight tariffs) are based on the considerably lower planned cost of production level for 1950."

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[1] Distortions in labour productivity indices seriously affect wages, bonuses, piece-rates, etc., and provided a further reason for the price reform.

[2] Marshev, *loc. cit.*

[3] A. G. Zverev, Minister of Finance, in his Budget Report, *Pravda*, March 11, 1949.

[4] *Voprosy Ekonomiki* (*Questions of Economics*), No. 8, 1948. Article by P. Vladimirov : " Operating Profits in Industrial Enterprises."

[5] " *Optovye tseny* " (Vladimirov's definition), but more accurately defined by Marshev, cf. following note.

It would appear that the new accounting prices [1] are to absorb the functions of the 1926/27 prices and those of the official fixed prices,[2] and will embody in detail not an actual structure of costs (as was the case before) but the planned structure for 1950. Broadly, then, for an initial period, the new prices will be somewhat lower than opportunity costs (viz., the basis of the 1950 planned costs) instead of being generally higher as was the case previously. Moreover, the new price structure institutes differentials between products in accordance with relative planning priorities. A statement in the coal industry journal [3] claims :—

> " The new prices have been fixed to reflect grades and quality. . . . These differences will make sorting work worth while and make the coal industry directly interested in supplying the national economy with those types and grades it most needs."

Sorokin [4] similarly refers to " planning prices being designed first and foremost to promote the most effective development of those industries which have priority."

There can be no doubt that the new planning prices must be as comprehensive a set of prices as the 1926/27 prices which they are replacing. The Minister of Finance spoke of " a number of branches of heavy industry," and Vladimirov specifically mentions only metals and fuel, electricity, thermal power, timber, cement, bricks and new rail-freight tariffs. The wide categories given by Vladimirov, in fact, cover a great part of the field of industry, but, to mention only some, there are sectors like chemicals, plastics and rayon, rubber and engineering goods (unless these latter are included under " metals ") which are clearly not included.

In these sectors it would seem likely that the 1948 official fixed prices,[5] with which the new accounting prices [6] are most closely linked, needed no modification to fit them into the framework of the new prices. This is likely to have been the case where the original 1926/27 prices or subsequent assimilated prices were fixed too high, either fortuitously at the outset or deliberately in the case of assimilated prices during the early planning years, and where, when a balance has been struck between inflation on the one hand and increased industrial efficiency on the other hand, the original or assimilated 1926/27 prices closely reflected the level of real costs of production actually obtaining in 1948. It seems not unlikely that this was the position certainly in the rubber and chemical industries.

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[1] *Optovo-otpusknye tseny 1949g.*, an accurate definition of the new prices in view of the combination of functions (*a*) and (*b*) considered at the beginning of Section II above.

[2] *Otpuaknye tseny.*

[3] *Ugol* (*Coal*), No. 1, 1949.

[4] *Op. cit.*, p. 24.

[5] *Otpuaknye tseny.*

[6] *Optovo-otpuaknye tseny 1949g.*, an accurate definition of the new prices in view of the combination of functions (*a*) and (*b*) considered at the beginning of Section II above.

The new planning prices, like the 1926/27 set, must also embrace farm-produce prices. In this case the " State delivery prices " [1] corresponding to the old official fixed prices [2] in industry will have been subject to certain increases, of which the only evidence is an incidental statement [3] that the State delivery price for raw cotton has recently been doubled. Even allowing for the importance now being attached to cotton cultivation, an increase in the " State delivery price " is clearly a matter of revision of planning prices, since encouragement to greater production takes the form of premium payments adjusted to emphasise priorities. Revision of State delivery prices is unlikely to have been confined to raw cotton alone, so that it would seem not unlikely that there has been a thorough-going overhaul of planning prices for farm produce coinciding with the reform of planning prices in industry.

The conclusion may therefore be advanced that the planning authorities in the Soviet Union have decided to make a fuller use of the price mechanism as an integral feature of their economic planning. Clearly, they have decided that while planning in terms of quantitative targets is essential, a functional use of the price mechanism is a necessary precondition to a sound and smoothly working economy. This is surely a lesson which Western " planners " would do well to note.

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[1] These are the prices at which the State accounts to *kolkhozy*, *sovkhozy* and individual peasants for " State deliveries " of farm produce and are to be distinguished from " State buying prices " paid for farm produce " delivered " (*i.e.*, sold) in excess of " State deliveries " as fixed by plan.

[2] *Otpuaknye tseny.*

[3] Reported in *Pravda* of March 3, 1949.

EXPECTATION IN ECONOMICS[1]

At two vital points the scientific development of economics depends upon an accurate understanding of human nature. One is in the explanation of a consumer's choice; the second the explanation of an entrepreneur's decision. There being many millions of consumers, we can for a time evade the duty of giving close study to the choice of an individual, contenting ourselves with observing the resultant of millions of choices expressed in the market; just as scientists developed a Theory of Gases, capable of giving approximately correct results, long before the details of molecular structure were known or could be studied. We need not therefore be too much alarmed because our theories of Utility and Indifference are infantile, and have very little foundation of knowledge of the rational and irrational workings of consumers' minds.

But when the decision of a single Board of Directors may involve the investment of millions, we begin to feel much less happy about a Boyle's Law for entrepreneurs—especially as the facts regarding the actions of entrepreneurs in the mass are difficult to gather and interpret. The psychological factors are so important in this case, indeed so dominant, that theories limp badly until they can find a satisfactory account of the individual entrepreneur's decision. An account is to be regarded as satisfactory if it is conformable to the human thinking process as we know it. It comes near to satisfactory proof when enough individuals, including actual or potential entrepreneurs, have given the nod of agreement—" Yes : that is how I decide."

A glance at the literature, for instance of the Trade Cycle, soon reveals how formless and unsatisfactory are the theories of entrepreneur's decision in current use. Where these are precisely stated at all, they usually assume a business man who is perfectly rational (apart from " waves of sentiment " which may reach him from outside), and whose brain, apparently of great capacity, is capable of performing integrations and of founding judgments upon a calculation of a mathematical expectation. As a picture of a Rockefeller or a J. P. Morgan, this is obviously somewhat idealised. The use of a simplified " working model " of an entrepreneur is, of course, a perfectly proper stage in the construction of a scientific theory; but the trouble is that no one enquires whether the simplification contains the essence of the reality.

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[1] A review of G. L. S. Shackle, *Expectation in Economics*, Cambridge: University Press, 1949. Pp. x + 146. 10*s*. 6*d*.

The results of Mr. Shackle's introspections on this subject are therefore very much to be welcomed, and they deserve to be brought immediately to the test of other minds. But since his ideas, though foreshadowed in earlier articles in this JOURNAL and elsewhere,[1] have first been set out in a complete form in his book, and since his arguments, being unfamiliar, are necessarily difficult to absorb, I propose to describe the main structure of the theory before examining it.

Conceive, then, of Adam, a primæval entrepreneur, trying to make up his mind whether to buy an orchard. The value of the orchard to him is related to its discounted future returns; but since we need not for the moment trouble ourselves with problems of time-discounting, it will be a valid simplification to suppose the value of the orchard to be determined by the size of next year's crop. The weather outside Eden being uncertain, this may amount to 2, 3, 4, 5, 6 or 7 tons of apples.

As Adam cogitates on the prospective purchase, he puts to himself a series of questions :

> " Shall I only get 1 ton of apples ?—Quite impossible
> Shall I get 2 tons ?—Surprised if it is as low
> Shall I get 3, 4 or 5 tons ?—All perfectly possible
> Shall I get 6 tons ?—Surprised if it is as high
> Shall I get 7 tons ?—Very surprising, but just possible
> Shall I get 8 tons ?—Quite impossible."

The answers to these questions determine his decision. They are not in terms of probability (we shall return to this distinction later), but in terms of the surprise, or lack of surprise, which would be felt regarding different outcomes. Adam, looking out from his " viewpoint " of the present at his " image-date "—the date of gathering next year's crop—brings before his mind a series of hypotheses regarding the size of that crop, and considers the *surprise* with which the fulfilment of each of these hypotheses, considered in turn, would be greeted. Thus are defined, for the different possible sizes of the crop, the values of Mr. Shackle's Potential Surprise Function.

It may be objected that Surprise is incapable of numerical measurement. The objection is not valid. By speaking of "values" of potential surprise, all we need to imply [1] is that a given set of hypotheses can be arranged in order of the surprise to which their fulfilment would give rise—some, perhaps, being bracketed as equal. Since the number of hypotheses capable of review by the human brain is finite, their ordering can always be expressed by attaching, to each, one of a finite set of numbers, ranging conventionally from zero surprise to some maximum surprise $\bar{y}$ which we associate with the occurrence of a miracle. The "values" of surprise so obtained are personal, and incapable of use for comparison between individuals. Nor can they be used for comparing the surprise associated with hypotheses from different sets unless we first claim that all the hypotheses of all the sets can provide a single ordering of surprise. The relation "twice as surprising" has only a formal meaning in the system. In fact, we treat surprise as numerical merely as a harmless convenience.[2]

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[1] See list in Shackle, p. ix.

Adam's potential surprise function can therefore be represented by a table, whose form is clearly typical, and likely to occur for many entrepreneurial decisions :

Tons :	1	2	3	4	5	6	7	8	9 . . .
Potential Surprise (arbitrary scale) :	$\bar{y}$	1	0	0	0	1	2	$\bar{y}$	$\bar{y}$ . . .

The enjoyment or distress to be obtained from contemplating a hypothesis is a function of the profit or loss which it involves, and of the degree of surprise which its fulfilment involves. A miracle —the occurrence of something completely unexpected—affords no enjoyment by anticipation. Events which are "perfectly possible" afford an enjoyment related only to their outcome. But events carrying an intermediate degree of potential surprise produce an enjoyment related to their outcome, but "written down" according to the amount of surprise associated with that outcome.

Adam, in fact, possesses what Mr. Shackle calls a *stimulation function* which relates his enjoyment or distress to the hypothetical outcomes and their degrees of potential surprise. Enjoyment or distress can be ordered, and thus represented numerically [1] on a scale whose zero represents an absence of stimulus—no enjoyment and no distress. Suppose Adam's outgoings represent 4 tons of his crop. Then we have something like this :

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[1] Mr. Shackle in fact implies more than this ; he supposes that the entrepreneur is capable of ordering differences of potential surprise, as well as potential surprise itself ; and is thus capable of finding a point midway between any two assigned points on his potential surprise scale. On this system potential surprise would be fully numerical—but my own intuition suggests that the assumption so made is more complex than reality.

[2] An analogous point arises in the theory of probability, and books do not usually distinguish clearly between (*a*) the very limited class of probabilities which can have the same numerical measure for all rational observers : (*b*) probabilities capable of numerical representation for a single observer only : and (*c*) probabilities incapable of any such measure by one co-ordinate, because they do not form part of a single ordered system.

Gain (tons) :	-3	-2	-1	0	1	2	3	4	5 . . .
Potential Surprise (arbitrary scale) :	$\bar{y}$	1	0	0	0	1	2	$\bar{y}$	$\bar{y}$ . . .
Stimulus (arbitrary scale) :	0	-2	$-2\frac{1}{2}$	0	$+2$	$+3$	$+1\frac{1}{2}$	0	0 . . .

The stimuli are not symmetrical in relation to the gain or the potential surprise : there is no reason why they should be. The essential point to be tested against experience is that the prospect of a moderately surprising gain of 2 may be more stimulating than that of a " perfectly possible " gain of 1. This surely is in accordance with what we know of human nature.

We now come to the centre of the argument :

(*a*) The hypotheses being passed under review are mutually exclusive. The stimuli to which they give rise are therefore *not additive* ; they are rivals, jostling each other for attention.

(*b*) The entrepreneur fixes his attention solely upon *two* hypotheses; that which offers the most enjoyable stimulus, and that which threatens the most distressing stimulus. In our example, these correspond to the hypotheses of 2 tons gain and 1 ton loss. These Mr. Shackle calls the *primary focus-outcomes*. For the purposes of comparison it is useful to replace these by " dummy " outcomes which would provide the same stimuli, but are associated with zero potential surprise. These would be the *standardised focus-outcomes* ; in our example, perhaps 1½ tons gain and 1 ton loss—the latter coinciding with the primary focus-loss.

So far we have been considering a set of hypothetical outcomes arising from a given course of action by Adam in the situation in which he finds himself—the offer of a price equivalent to 4 tons of outgoings, measured in apples. To this course of action there correspond two co-ordinates, the standardised focus-gain and the standardised focus-loss of the corresponding set of hypotheses. We thus have the correspondence :

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[1] This, I suspect, conceals a crucial difficulty. The stimulus is a function, not of gain or loss directly, but of the *utilities* they represent. It is therefore a function of two quantities which may be only formally numerical —about which our knowledge is essentially a knowledge of greater or less. If I prefer to eat chicken rather than lamb, and lamb rather than whale : and if I find four-hour intervals between meals more agreeable than five-hour, and five-hour more agreeable than six-hour : then it is certain that I shall prefer chicken every four hours to whale every six hours. But who knows whether chicken every six hours is better than whale every four hours ? It would be perfectly logical to suppose Adam "at a stand in his mind," strictly *unable to decide* whether he " prefers " the stimulus of thinking about an unremarkable 1 ton or a surprising 2 tons. He would have to resolve his indecision by tossing a coin, and I suspect that this also is true to human nature. But I will leave this difficulty on one side, commending it to Mr. Shackle's attention. See also, however, the footnote on p. 101.

Buy for equivalent of 4 tons : (1½, 1)

But other possibilities are open, for instance :

Do nothing : (0, 0)
Buy another orchard, same price : (1½, 1½)

All the ways open to an entrepreneur of holding or investing his wealth thus map out a series of points on a plane. Between some of these points he may be *indifferent* : that is to say, it is possible to draw on the plane a series of curves joining points of equal attractiveness. (5, 2) may be as attractive as (0, 0) to a fairly cautious man, while a hardened gambler might almost be willing to exchange the doubtful prospect represented by (1, 2) for the dull certainty of (0, 0). The curves, forming a *gambler indifference map*, are therefore personal to the entrepreneur. They will form a non-intersecting family, one through each point of the plane.[1]

The rule of decision for Adam is now clear : among the courses of action open to him he must choose that which will bring him on to the " best " indifference curve—*i.e.*, that whose focus-gain, for given focus-loss, is highest. If there are two or more offering equal attractions, he must toss a coin to make his final choice.

This is the main structure of Mr. Shackle's theory. A very important subsidiary is his most suggestive discussion of " expected clarifying of expectations." An entrepreneur may know or expect that at some date between his viewpoint and his image-date uncertainties at present in his mind will be swept away. Thus at present the Board of a steel company intending to build a new blast furnace " knows " that before the autumn of 1950—and therefore before the new furnace would be completed—there will be a General Election which will decide for or against nationalisation.

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[1] Mr. Shackle's diagram (p. 30) takes focus-loss as the x-co-ordinate. He has since suggested (contrary to ll. 7–8 of p. 30) that negative co-ordinates have a meaning. Thus an enterprise bound to succeed (with unit focus-gain) would be represented by (1, −1), and would " beat " any point such as (1, 1). An enterprise bound to lose would carry the disagreeable focus-outcome (−1, 1). It would seem to me that an enterprise having a range of possible outcomes, all of which are gains, might be regarded as having a focus-loss equal to the lowest possible gain (with negative sign attached); the most disagreeable stimulus available being zero. This would give a meaning to all points in the (− +) and (+ −) quadrants, but the (− −) quadrant would be left empty, whichi s certainly an oddity. The subject demands more thought.

Such a clarifying of expectations will result in events previously regarded as perfectly possible or potentially mildly surprising becoming " miraculous if they happen "; events previously perfectly possible may become potentially surprising, but the opposite change cannot logically occur—from the present viewpoint the entrepreneur's surprise function allows for the outcomes which may follow any of the foreseeable happenings at the clarifying date. It can then be shown to follow—in conformity with observation—that as that date approaches more and more investment-decisions will be postponed; and that the passing of the date will probably release a number of investment-decisions, whatever has occurred. But the occurrence of an unexpected, unthought of or surprising, event (such as the return of a minor party to power at a General Election) will reduce investment-flow, and heighten the attractiveness of liquidity, while entrepreneurs form and test new judgments of the situation; and this suggests some interesting reasons for the asymmetry of the Trade Cycle.

Mr. Shackle's other " worked examples " of the applications of his theory are less successful—a fact which neither condemns the theory, nor detracts from the value of the book, for the author has attempted country mountainous with difficulties. The chapter on " the choice of assets to be held for speculative gain " arrives logically at the conclusion that a speculator should never hold more than two kinds of asset; and Mr. Shackle's efforts to extricate himself from this ridiculous conclusion are not, I think, entirely satisfactory. The explanations of the sensitivity of speculative markets to small happenings, and of the alleged " floating value " of land, are successful tests of the theory. A chapter on " design of taxation to preserve the incentive to enterprise " offers a revolutionary idea, but needs to be expanded to bring it closer to practical reality. Finally, Mr. Shackle's " theory of the bargaining process " is certainly an improvement on some classical theories of bargaining, but it is difficult to check it against reality until it can be expanded to take explicit account of the Alternative Purchaser who lurks round the corner in the real world. I have never found it easy to think myself into the mind of Robinson Crusoe bargaining with Man Friday.

Let us, however, return to the main structure of the theory. Mr. Shackle makes it overwhelmingly clear that his concept of " potential surprise " stands in sharp contrast to the orthodox idea of probability. In this he is supported by the chief author of the frequency-ratio concept of probability, John Venn, who writes :—

> ". . . this emotional accompaniment of surprise, to which we are thus able to assign something like a fractional value, differs in two important respects from the commonly accepted fraction of belief. In the first place, it has what may be termed an independent existence; it is intelligible by itself. . . . Hence, in the second place, it is as applicable, and as capable of any kind of justification, in relation to the *single event*, as to a series of events. In this respect . . . it offers a complete contrast to our state of belief about any one contingent event."[1]

Mr. Shackle's objections to the use of frequency-ratio probability may be summarized as follows :—

(*a*) The decisions of entrepreneurs seldom form part of a long series of similar experiments; in any case the outside conditions never allow the same decision to be repeated in the same circumstances.

(*b*) Some decisions may be, in strict logic, unique; failure may deprive the entrepreneur of all opportunity to continue in his trade. He is a gambler who, having lost, must retire from the tables.

(*c*) The possible outcomes of a given course of action are not, therefore, to be regarded as related, occurring with given relative frequencies in a long series of experiments; but as wholly independent and mutually exclusive alternatives, arising from a single never-to-be-repeated set of actions.

The first objection is perhaps hardly justified; it is not, I think, a necessary feature of frequency-ratio probability that a long series of experiments should in fact be carried out—only that it should be possible to conceive of such a series. In so far as entrepreneurs base their judgments of probability on " general knowledge of the market "—that is, on knowledge of similar but not identical ventures—a new element of error or misjudgment is introduced. But the statistical device of regarding a sample as one of a hypothetical infinite series of samples drawn from the same population is not invalidated because that series is never in fact drawn.

Nor is the second objection in itself final. If the entrepreneur was gambling at a roulette table, his choice could logically be based : (*a*) on the chances of given gains and losses, which can be brought within the framework of frequency-ratio probability, and (*b*) on the finality of losing his total resources—which might lead him to limit the size of his stakes. Again the theory could be developed by adding an extra element to the data provided by frequency-ratio probability.

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[1] Venn, *The Logic of Chance*, 3rd edition (1888), p. 158.

But I think that Mr. Shackle is on sound ground in supposing that the application of frequency-ratio probability to economic decisions is forced and unreal. He would, I take it, agree with Professor Jeffreys, as far as economic applications are concerned :—

> " My contention is . . . that in practice no statistician ever uses a frequency definition, but that all use the notion of degree of reasonable belief, usually without ever noticing that they are using it and that by using it they are contradicting the principles they have laid down at the outset." [1]

In fact, the probabilities with which the entrepreneur has to deal lie *outside the field* of the frequency-ratio theory ; the limitation of that field is very clearly discussed in Chapter VIII of Keynes's *Treatise on Probability*, and indeed by Venn himself :—

> " In every case in which we extend our inferences by Induction or Analogy, or depend upon the witness of others, or trust to our own memory of the past, or come to a conclusion through conflicting arguments, or even make a long and complicated deduction by mathematics or logic, we have a result of which we can scarcely feel as certain as of the premisses from which it was obtained. In all these cases then we are conscious of varying quantities of belief, but are the laws according to which the belief is produced and varied the same ? If they cannot be reduced to one harmonious scheme . . . then it is in vain to endeavour to force them into one science." [2]

The use of the frequency-ratio theory, in fact, would force a distinction between an ideal system, theoretically capable of indefinite replication, and in that replication yielding given outcomes with certain definite frequencies ; and the faulty judgment of the individual in estimating these frequencies and in drawing conclusions from them. This distinction cannot exist, for the ideal system is not mechanical—it contains elements such as the result of the next General Election, which is strictly unknown and can only be given a probability in terms of the judgments of fallible human beings.

I am not, in fact, able to follow Keynes and Jeffreys in applying the terms " rational " or " reasonable " to degrees of belief. Judgments of the kind considered here arise essentially from the reaction of imperfect knowledge on fallible minds. No doubt we should look askance at the decisions of a lunatic ; but I doubt if we can give any precise meaning to the idea of a perfectly rational mind making a unique best use of the incomplete knowledge presented to it. We are left, in fact, with no more than a set of entirely subjective assessments of probability, capable of formal measurement on a numerical scale by a single individual, but not of comparison between individuals.[1] The calculation of a mathematical expectation in such circumstances seems a formal and irrelevant exercise.

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[1] Jeffreys, *Theory of Probability*, 1939, p. 300.

[2] *Op. cit.*, p. 124.

But if we reduce probability to this level, how does if differ from Mr. Shackle's concept of Potential Surprise? Clearly there is a one-one correspondence between the two; if the essence of our knowledge of probabilities is that we can place them in order, this order of " more or less probable " corresponds to " less or more surprising." To the concept " zero probability " corresponds " maximum potential surprise." But the other bound of the potential surprise scale, " perfect possibility," corresponds to the highest probability in the series under consideration, whatever that may be. It will seldom be certainty; but I think it is obvious that the occurrence of the most probable of a series of outcomes, however low the measure of probability, must occasion zero surprise. The occurrence of any outcome with a probability less than the highest must produce some surprise, however little; so that Mr. Shackle's " inner subset " of hypotheses, all carrying zero potential surprise, must carry equal assessments of probability exceeding the probabilities of any hypotheses outside the subset. This he expresses by saying that they carry equal degrees of belief, superior to those of the hypotheses outside the subset.

In one respect only might the probability formulation seem superior. The entrepreneur can manipulate his scale of probabilities in any way, provided that he keeps the ordering the same and provided that any exhaustive set of probabilities add up to certainty. There is no longer any need for " twice as probable " to mean " twice as frequent in a long series of experiments "; it can now be made to mean " twice as attractive." In his chapter on " the application of probability to conduct " Keynes puts the question :—

> . . . " Whether the undesirability of a given course of action increases in direct proportion to any increase in the uncertainty of attaining its object, or whether some allowance ought to be made for 'risk' . . ."[2]

If we confine ourselves to that limited class of probabilities capable of numerical comparison between individuals, there is no easy answer to this question. But if, as I contend, probability in economics is essentially personal and subjective, doubling the probability can be *made to mean* doubling the attractiveness of unit gain.

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[1] See p. 94 above.

[2] *Op. cit.*, 1929, p. 313.

But, of course, precisely the same convention could be applied to potential surprise; and the value of the convention would in any case be rather doubtful. What do we mean by " doubling the attractiveness "? It might mean making one unit of gain as attractive as two units were before. But are two units twice as attractive as one of the same probability? We are back at the subjective nature of utility; attractiveness may not even be capable of ordering,[1] and it is doubtful whether it is worth giving it a numerical scale. I conclude that in economics the relation " twice as probable " usually means nothing at all; indeed, I doubt if it is often present in our minds.

In concluding that Mr. Shackle's theory of potential surprise is equivalent to the only kind of probability theory valid for economic hypotheses, I do not wish to minimise his great and fundamental service in forcing a clarification of our ideas. Indeed, since " probability " is very liable to have the wrong associations, I hope that his terminology will be adopted.

We now come to the centre of Mr. Shackle's argument. What functions of the probabilities or the potential surprise values, and of the outcomes or their utilities, are used by the entrepreneur in forming his decisions? It is quite inconceivable that he should do what many writers imply, and form for each course of action his mathematical expectation of gain, choosing that course for which the mathematical expectation is highest. For clearly the gain would have to be computed in units of utility. The idea that an entrepreneur performs multiplication and addition or integration in his head, using two functions, neither of which possesses any objective numerical scale—or indeed, any scale consciously present in his mind at all—will not stand looking at. Such a process could hardly be subconscious, nor is it sufficient to suppose it purely accidental. It may or may not be rational, but, being impossible, it is profoundly uninteresting.

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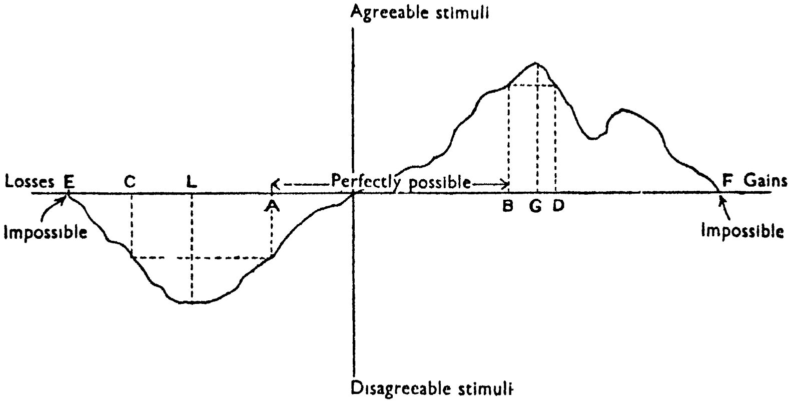
[1] See p. 95, footnote 1. We can now complete the argument of that footnote by referring to Von Neumann and Morgenstern's observation (*Theory of Games*, 1947, p. 17) that an individual's utility scale can be made fully numerical *provided* that frequency-ratio probability is accepted. They add in a footnote (p. 19): " If one objects to the frequency interpretation of probability then the two concepts (probability and preference) can be axiomatized together. This too leads to a satisfactory numerical concept of utility which will be discussed on another occasion." I have not yet seen the further discussion to which they refer, and I cannot therefore say whether it removes the difficulty referred to in my earlier footnote. There would, of course, remain the difficulty that the human scale of preferences is neither complete nor logical.

The removal of this ridiculous idea, fathered upon economics by over-enthusiastic mathematicians, leaves the field clear for new suggestions. Consider a single-humped frequency distribution, whose " centre " we are trying to find. We lack the arithmetical ability to find the mean—equivalent to the mathematical expectation. Our simplest and most obvious choice is then the mode, or peak of the curve. This is Mr. Shackle's choice, except that he has in mind two distributions—the attractiveness of different gains, and the disagreeableness of different losses. Each will quite commonly have a single-humped distribution, or at least will have one peak higher (or trough lower) than the rest. Mr. Shackle fixes his intention on the highest peak and the lowest trough.



I think that the picture above fairly represents the form which common sense would suggest for a stimulation function. What we have to do is to find parameters, capable of immediate apprehension by the mind, which in some sense represent or sum up this form. It is clear from the figure that, if the process of finding a mean or mathematical expectation is ruled out, we can hardly usefully work with less than two parameters. But the process of balancing possible gain against possible loss is so familiar to the human mind that a solution involving just two parameters is very attractive. Let us consider some possible answers.

(*a*) Mr. Shackle's answer follows logically from two principles : that losses and gains are to be considered separately : and that the greater stimulus eclipses the less. The first principle follows naturally from our search for two parameters, but it is perhaps just worth mentioning that some unformed and injudicious minds might focus attention on a single maximum stimulus—the vision of the gain G obliterating the lesser fear of the loss L. We should describe such people as " foolhardy " ; it is perhaps reasonable to suppose that the attitude is not common among entrepreneurs. The second principle appeals to Mr. Shackle, I think, as the logical result of the mutual exclusiveness of outcomes. He rejects the addition of expectations of alternative outcomes, and his own principle represents the other extreme.

This is the simple and obvious answer, but it leaves in the mind a slightly uneasy feeling that human beings are not quite logical enough to apply it—or perhaps not quite definite enough in their assessments of stimulus. Having picked on the outcome offering the greatest stimulus, is there no sideways glance at the less attractive possibilities ?[1] Is it immaterial whether the stimulation curve descends sharply from its peak, or tails off slowly over a wide range of outcomes ?

(*b*) Another possible answer would be to take the bounds A and B of the " perfectly possible " range, thus avoiding the paradox pointed out by Mr. Harrod,[2] that Mr. Shackle's notion of focus-outcomes " assumes the individual to guide his conduct by reference to outcomes which he expects not to happen." Such an answer involves the assumption that the entrepreneur divides the stimuli he receives, as he considers various hypothetical outcomes, into substance and dream; and rejects as dreams those stimuli which arise from a result which would surprise him if it occurred. He focuses attention, therefore, on the greatest stimuli consistent with the outcomes seeming " perfectly possible."

(*c*) The use of the full range EF could hardly be justified ; but we perhaps ought to consider two special possibilities :—

> (i) *The Cautious Trustee.* He admits to his mind, when he is forming a decision, no dreams of surprising gains ; but he takes into consideration possibilities of loss which would surprise him. In an extreme case his focus-points might be E and B—the worst conceivable loss and the best perfectly possible gain ; perhaps more usually he might concentrate on L and B. He can, of course, be fitted into the Shackle scheme by assigning zero stimulus to all points above B. But it might seem reasonable to separate stimulus from

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[1] It is possible to set up rudimentary entrepreneurial experiments in which it is quite certain that regard is had to outcomes other than the focus-outcomes. This is suggestive, but not final; for as we pass from simplified experiments to the real world, it may be that the human mind finds it increasingly necessary to concentrate or focus its attention on a single gain and a single loss, as the only way of reducing its chaotic thoughts to seemly order.

[2] Shackle, p. 20.

decision—the gain of *G* is a dish to make the mouth water, but on principle one refrains from tasting it.

(ii) *The Mug.* He is first cousin to the foolhardy individual mentioned under (*a*), differing only in admitting to his mind thoughts of "perfectly possible" losses. His focus points are *A* and *F* or *A* and *G*.

(*d*) Both the solutions (*b*) and (*c*) assume that, having received a stimulus, the entrepreneur closes a door in his mind and refuses that stimulus admittance to the chamber of decision. Let us now suppose that, having present in his mind the "perfectly possible" outcomes *A* and *B*, he admits all the "surprising" outcomes which are *not inferior*, in respect of the stimulus they offer, to *A* and *B*. In Mr. Shackle's scheme the tallest of the new-comers, *G* and *L*, immediately monopolise attention. But if we are to admit the illogical sideways glance at other possibilities, might it not be at the outer points *C* and *D*, which are just as stimulating as *A* and *B*? Some such choice might be justified by supposing the entrepreneur extremely vague about stimuli outside the range *AB*. He might find difficulty in combining utility and potential surprise to form the stimulation function, and thus be unsure of the position of the modes *G* and *L*. But we might suppose him as roughly marking out a range of outcomes "at least as attractive" as the outcome *B*, which would serve as a fixed point for comparison, and focusing attention on the outer point *D* of this range, which might be easier to identify (and therefore more present to the mind) than *G*. This scheme may seem somewhat far-fetched, but something like it seems to be needed to give expression to one's instinctive desire to give some importance to the dispersion about the mode.

The interesting thing about this solution, however, is that it gives the same results as (*b*): for the standardised focus-outcomes in both cases are *A* and *B*, and the two solutions therefore map out the same points on the gambler indifference map. The two can be regarded as alternative ways of bringing the mind to the same conclusion; so that the apparent attention given to dispersion in solution (*d*) is largely illusory. It is not, in fact, obvious how we can bring dispersion into a two-parameter system; and the discussion of three- and four-parameter systems, even if it could be true to nature, would lie beyond the compass of this article.

All these alternative solutions are founded upon Mr. Shackle's ideas, in that they involve *focus-values*; and here his contribution is fundamental. A final example will suggest the wide range of subjects which now require re-thinking. The publication of Von Neumann and Morgenstern's *Theory of Games and Economic*

Behavior was an event in the economic world,[1] since it opened up a new understanding of the nature of bargaining in small groups. But the keystone of that theory is the proof that the zero-sum two-person game is always "strictly determined," and this proof depends on the possibility that the players may vary their "strategies" or schemes of play from game to game according to certain probabilities. In other words, the theory makes essential use of frequency-ratio probability. It does not follow that its applications to economics will be invalid, but clearly the whole theory will require careful reconsideration.

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[1] See J. R. N. Stone, ECONOMIC JOURNAL, June 1948.

REVIEWS

Le système monétaire de Bretton Woods et les grands problèmes de l'après-guerre. By PROF. ROBERT MOSSÉ. (Paris : Librairie du Recueil Sirey, 1948. Pp. 156.)

IN this elegant and lucid super-pamphlet Prof. Mossé, who was a member of the French Delegation to the Bretton Woods Conference, sets himself a three-fold task : first, to give a critical exposition of the Articles of Agreement of the International Monetary Fund ; secondly, to give an account of the functioning of the Fund in the face of post-war monetary problems as these have actually developed ; and thirdly, to make some suggestions for changes in its constitution and practice which would enable it to play a more active and constructive part in combating present difficulties.

The preliminary task of exposition is brilliantly performed. In Prof. Mossé's limpid and persuasive French the crabbed and Rabbinical clauses of the Fund Charter are dissolved like lumps of ice in warm milk, and the Plan, whatever its defects, assumes a coherent and easily intelligible shape.

To its defects, in general conception and in detail, Prof. Mossé is anything but blind, bringing to bear on them, as is natural, the viewpoint of a good European and a member of a nation which was certain to stand in need of lavish post-war help. In considering his criticisms, let me dispose first of two matters in one of which he seems to me to be inaccurate and in the other, like certain British critics before him, to be definitely if unintentionally unfair. (1) The central obligation of membership (not "to impose restrictions on the making of payments and transfers for current international transactions," Article VIII, 2(*a*)) was not, as is suggested on p. 39, understood by the Americans or anybody else to carry the obligation to abolish centralisation of exchange dealings. It was well understood that some countries would continue to operate centralised systems even after the end of the transitional period ; and the obligation was to operate them in such manner as to preserve effective convertibility. (2) The provision (Article VI, 2) permitting "creditor" countries to have recourse to the Fund for financing capital transfers was not, as suggested on p. 26, a valuable privilege selfishly claimed by the "creditor" countries, but an attempt on their part to contribute towards what Prof. Mossé elsewhere recognises to have been a most desirable objective—that of getting strong currencies back into the Fund. This clause encourages a " creditor " country desirous of doing long-term foreign investment to do some of it in a manner which will replenish the Fund with its currency.

This misunderstanding occurs in the course of one of several passages in which Prof. Mossé strongly criticises the various special rights accorded in Article XII to " creditors " in the Fund and the various limitations and charges imposed in Article V on the operations of " debtors," and roundly dismisses the whole concept of " creditors " and " debtors " which underlies these provisions as inconsistent with the professed character of the Fund as an association of equal members, mutually exchanging currencies of equal status. Obviously the provisions in question are debatable, as indeed they were debated, in detail. But I venture to regard Prof. Mossé's attitude as somewhat pedantic and unrealistic. On the point of form, the creditor–debtor aspects of the scheme to which he objects would have been even more prominent in the Clearing Union set-up which he would apparently have preferred. And on the point of substance, it is rather easy to forget that when the Joint Statement of Principles (Cmd. 6519), of which the Fund Charter was an elaboration, was drawn up, even UNRAA was in its earliest infancy and not only the Anglo-American Loan and Marshall Aid but even the Fund's own yoke-fellow the International Bank—even the definitive cancellation of Lend-Lease—were all still in the womb of time. However much the authors of the Fund might desire to be building for a " normal " future, they could not ignore the danger that their infant would be subjected to excessive pressure in its early days. In these circumstances it was not only the " creditors," it was the serried rows of hungry " debtors " who sat round the Bretton Woods table who needed protection—protection from each other's potentially limitless voracity ! Prof. Mossé's two charges—that " dollar shortage " was not foreseen, and that too much care was taken to protect the limited supply of dollars then in sight, surely go some way towards cancelling each other out.

Critical as he is of many of the original concepts of the Fund, Prof. Mossé writes appreciatively of its endeavours to soften those concepts in practice and to adapt its policies to the exigencies of the uneasy world into which it found itself born. His account of its principal public shindy, that with the Government of France in 1947–48, is instructive and fair-minded ; and he gives it due credit for its services as a forum of international discussion and for the enlightened opportunism of its attitude towards the survival of exchange controls and towards the fixing—and the keeping unfixed—of exchange rates.[1] And there is evidently a *prima facie* attractiveness about his contention that it should now cease to wait for a " normal " world that is so long in being born, and should undergo such changes as are needed as to enable it to throw its weight more effectively into the battle with what has turned out to be the most spectacular economic problem of our time—the continuing lack of balance between the dollar and the non-dollar regions of the free world.

In commenting on Prof. Mossé's specific proposals, one must remember that they were put forward before the devaluations of September 1949 and the accompanying Washington conversations had turned the spotlight on new dangers and new hopes. Nevertheless, one must judge their usefulness in the light of these later developments. That being so, they seem to me to be of such a character as to inspire grave doubts. For they are founded upon two assumptions which I personally should be loath to accept. The first is that the " planification " of foreign trade by " *économies cloisonnées et nationalement dirigées*," moved only in a minor degree by considerations of price (pp. 121-2, 127), must be accepted as a permanent feature of the environment in which the Fund will have to work. The second is that an attempt can usefully be made by means of automatic gadgets to bring home to creditor countries their undoubtedly grave responsibilities. From these two roots springs the great idea (not unfamiliar to readers of some of the publications of the London Chamber of Commerce). The rules of the Fund, says Prof. Mossé, should be so altered as to *compel* those members whose currencies are becoming scarce in the Fund to buy up the abundant currencies and use them for planned purchases of " additional " imports or investments, under penalty of the money becoming invalid (*périmer*) if not so spent (p. 133). Alternatively, but, as a second best, the Fund should endeavour to sell redundant currencies at cut rates to countries prepared to use them for the organised purchase of " additional " imports (p. 134). And the scope for such transactions should ultimately be increased (this part of the programme is sketched in rather vaguely) by turning the Fund from a lender of last resort into a general clearing-house for all transactions between national exchange authorities (" *une sorte de super-centrale des devises*," p. 129). Meanwhile it should play an active part in the promotion of intra-European trade by guaranteeing a European clearing system (p. 138).

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[1] He underestimates, I think, the inconveniences of a floating exchange rate as anything but a very temporary expedient.

No one would deny the reality or the difficulty of the problems with which Prof. Mossé is concerned. It is certainly to be desired that the nations of Europe should somehow become more efficient laundrymen for each other's washing, provided only that that does not militate against their becoming more efficient bootblacks for the dollar world; and it may be that the Fund will feel moved, and find means, in due course to give more help in fostering the former process than, given the existence of E.R.P., it has hitherto seen occasion to do. But it may also well be that in this sphere of intra-European commerce the time is ripe and the omens favourable for a decline rather than an increase in the intensity of the "planification" of foreign trade, and in that case it would be a pity to undertake a thorough revision of the Fund Charter based on the opposite assumption. Looking across the Atlantic, it is indeed essential that the dollar world should learn to acquiesce with a good grace in having its boots blacked. But the recognition of creditor responsibilities is a plant of tender growth, in constant peril from the vested interests of private businesses, labour unions and Government Departments, and needing much firm but tactful cultivation by the enlightened statesmen and publicists who realise its necessity. I cannot but think that their task would be immensely hampered by an attempted revision of the Fund Charter which could be not untruthfully represented as an attempt to bludgeon the American people, on pain of losing its money outright, into organising gigantic schemes of State purchase, in which it does not believe, of over-priced commodities which it does not want.

During one of the preliminary discussions in 1943 of the abortive Clearing Union, someone evolved and handed secretly round the table (or part of it) the following quatrain :

> The problem of working this document out
> Is rendered acute by a troublesome doubt :—
> Ought we to love, honour, cherish and thank or
> To kick on the backside the blokes who hold bancor ?

That dilemma, in new forms, still perplexes the European mind. In Prof. Mossé's final proposals, as in his initial criticism of the Fund Charter, I cannot help finding rather too strong a strain of that natural impulse to plant kicks on the backsides of one's benefactors which at times overcomes us all, but which a wise statesmanship will seek to sublimate, so far as may be, into an earnest endeavour to pay our own way, even at the cost of some disturbance to our established habits of life and our cherished ideological shibboleths.

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British War Economy. By W. K. HANCOCK and M. M. GOWING. (London: His Majesty's Stationery Office. 1949. Pp. xvii + 583. 21*s.*)

THIS first volume in the United Kingdom Civil Series of Histories of the Second World War will stir many nostalgic memories in the breasts of English, and perhaps also American, economists. Any review must begin by paying tribute to the tremendous labours of the authors and the remarkable picture that they have presented of the immensely complex ramifications of the economy at war. Indeed any reviewer must fear that his own very natural criticisms of some of the authors' conclusions may spring from a failure to have achieved in war-time the detachment and the synoptic view which the authors, without the same responsibility for detail in particular fields and without the dangers of departmental loyalties, have so clearly aimed to attain.

Yet in a sense, if one major criticism of this book is to be made, it is that it does not make it easy for its readers to achieve that synoptic view. In the first place, as the Preface frankly admits, this is not an exhaustive picture of the war economy. It is described by the authors as " a central [view]; it might be called the War Cabinet view or—for the crucial middle period of the war—the view of the Lord President's Committee." But it is only in a limited sense a view as wide as that. For the Lord President's Committee (and still more the Cabinet) was a group of ministers who met to transact business in a certain field, but came to it equipped with knowledge of the progress and the problems of the war in a much wider field. This volume marshals the problems with which those Ministers dealt, but it does not marshal the full knowledge that was in their minds in dealing with it.

And, in the second place, one very important aspect of the war economy is not here reviewed. The whole of the problems of war production are reserved to be handled in a volume which Professor Postan is writing. This may have been inevitable. But Professor Hancock has not hesitated to draw on the work of other war historians for his treatment of the central problems of manpower, of food and agriculture, of shipping and, to a rather less extent, of raw materials. The result has been that we see here the negative aspects of the story, the release of resources for war, but we do not see them in close relation to the positive side of the development of war production. Nor do we see as one single problem the central issue of the maximum concentration of effort upon the enemy, with its related problem of how " capitalistic " the war should be—how a balance could best be struck between larger numbers in the forces and larger equipment per head with greater intensity of munitions production. Thus the whole central picture will emerge only when Professor Postan's volume appears. Even then it is not clear whether we shall have a single synoptic view of the economic war effort in all its aspects.

I have deliberately stressed this because to my mind one of the key problems of economic administration in war is the provision of adequate information at the centre to enable the major central decisions to be taken wisely. The machinery of co-ordination receives little discussion in this volume, but if the history is in any sense intended to glean lessons for future war administrators, these were lessons that were worth putting on record.

Curiously the difficulties that beset anyone who needs to form a synoptic view are almost perfectly exemplified by the book itself. Its architecture is partly chronological, it is partly also topical. The chronological division breaks the book into five parts : a perspective of the Napoleonic Wars, of 1914–18, and of the phases that led up to the outbreak of war in 1939; the nine months down to Dunkirk; the period from Dunkirk to Pearl Harbour; Pearl Harbour to Normandy; and finally, the period after Normandy and the first thoughts on the problems of reconstruction. Within this chronological division we have the various topics—manpower, transport, finance, civilian standards, inter-allied co-operation—discussed in relation to each period. Thus there are five discussions of manpower, if one includes the discussions of 1914–18 and of the post-war problems of transition. But each is in large measure self-contained, and some of the periods—particularly that from Pearl Harbour to Normandy—cover what is not only a long time measured in years, but also a number of very varied phases of the war. It is very far from easy, even for one who lived through these events in the midst of the machine that Professor Hancock is describing, to re-create for himself the full situation of March 1941, or of July 1942, or to remember what exactly were the problems of expansion of war effort or of inter-allied planning that were paramount at each of those moments. Yet without the full picture it is impossible for any reader, in the midst of a discussion dealing only with manpower, to make up his mind whether Professor Hancock is right or wrong in castigating as severely as he does the Board of Trade for excessive zeal in concentrating industry when the demands for manpower did not (as he holds) justify it. Again, is Professor Hancock right in castigating the Joint War Production Staff for wishing to see the possible scales of mobilisation of the forces and munitions in the early autumn of 1942 before the results of the count of unemployment books was available? What programme decisions or what Anglo-American discussions were at issue? Again, is Professor Hancock right in holding that we were unnecessarily alarmist about imports and stocks in 1942 and the spring of 1943? Can his historians really estimate *ex-post* the minimum insurances in the form of stocks which the Ministry of Food ought to have demanded *ex-ante*? He himself, on p. 434, seems in only half-hearted agreement with the views of the historian of Food Policy quoted on pp. 432–3.

I have instanced these cases taken at random, because in all three my own judgment was, and remains—very possibly wrongly—opposed to the verdict of the historians. It is always æsthetically and intellectually desirable not to attempt to move the administrative machine faster than it can decently deliberate, digest and operate. But there were moments in the war when the machine had to be shaken out of its lethargy. It is strange that the authors, who are patently shocked by the lethargy of the first nine months, seem at moments to be equally shocked by excess of zeal.

This impression is perhaps heightened by one curious feature of the history. War, whether one likes it or not, is essentially a competitive struggle. We were fighting the Germans. Our task was to mobilise more thoroughly, to employ our resources more wisely, to distribute them more effectively, to bring them to bear on the enemy more violently. Did we do so? The answer is not to be found here. The German economy at war and its achievements receive scant mention. When comparison is made, it is made rather with our Allies. Our own mobilisation is compared and contrasted with that of the United States in considerable detail, but in the end with little profit. For the essence of the activities of the United Kingdom and the United States was that they were complementary; our mobilisation of resources in the forces and munitions would have been less if they had not retained the resources in agriculture to feed us, and in other industries to minister to many of our civilian needs. I very much hope that before the war histories are completed, room will be found for a comparative analysis of the Axis and Allied war economies. First attempts at measurement have been made by Professor A. J. Brown, Mr. Kaldor, Dr. Morgan, in a review printed below, and by others. I think Professor Hancock is, moreover, a little conservative in suggesting that we do not (and did not in war-time) know within reasonable margins of error the real sources of our own war effort. If the purists of the Central Statistical Office were reluctant to make estimates, we had, and used without benefit of clergy, less official estimates. Mr. Kaldor's reviews in the ECONOMIC JOURNAL of the first two National Income White Papers illustrate what could be done in this way.

What are the chief impressions that this critical study of the economy at war leaves on one's mind? The most powerful impression is undoubtedly the missed opportunities of the last years of the peace and the early months of war. It is almost impossible to understand why no one heeded Sir Arthur Salter, and no substantial reserve stocks of timber, iron-ore and steel, and of the bulk foods, particularly wheat and sugar, were built up. In retrospect the bungles of those who attempted before the war to foresee our shipping problems and our railway problems of port clearance are largely to blame. It is almost equally impossible to re-create in one's memory a coherent picture of the world in the first nine months of war, of the lack of determination and leadership, the self-created obstacles which melted away after Dunkirk, the loss of precious time which we could in no sense afford.

Of the odd problems of that period, the history does little to solve what I have always regarded as the oddest. Why did we devalue the pound by 14% at the outbreak of war? Many of the early difficulties of inflation, wage increases and the like flowed from that action. Far too much of the thought and effort of those who should have been converting the economy to war were temporarily misdirected into dealing with the consequences of devaluation. Was it a deliberate action, or was it wholly unexpected and inadvertent?

The other chief impression that remains is the extraordinary difficulty of judging *ex-ante* the potential scale of the war effort. Already in 1940 the Chancellor of the Exchequer is nervous that it is being pitched too high and that inflation is a danger to be greatly feared. By 1942 we are convinced that we have almost reached maximum mobilisation. Yet by 1943 we have found over a million more men and women for the forces and munitions. By 1943 we were certain that mobilisation was past its peak. And in a sense it was; the total of the forces and munitions declined slightly by 1944. But if the casualties of the year are added, the total withdrawn from other employment was still increasing. If there is a moral, it is surely that a country that has leadership and determination can go far beyond the sober calculations of peace-time statisticians, and can continue to scrape the barrel when all the evidence shows that it is empty. But above all the moral is surely that we can never exaggerate the value of the leadership of Mr. Churchill, when allied to the wisdom and unifying skill of Sir John Anderson.

There is one major question about this history which will, I know, be hotly debated by all who served in the Civil Service during the war. It is a criticism not of Professor Hancock and Mrs. Gowing, but of the rules imposed upon them from above. Throughout this history, ministers, or a few of them at least, have a corporeal existence. Maynard Keynes intermittently and illegally refuses to be disembodied. Civil servants are phantoms, and their actions are the mere implementations of ministerial policies. But no one who lived in Whitehall will be deceived by this. I shall say flatly that I regard an attempt to write the central history of the British War Economy without naming Edward Bridges, Norman Brook, Wilfrid Eady, John Henry Woods, Godfrey Ince, Cyril Hurcomb, and among our economists Lionel Robbins, John Jewkes, James Meade, Arnold Plant, as the purest nonsense. Do the historians propose to emasculate military history and conceal Montgomery, Alexander and Wavell on the ground that they were carrying into effect the policies of the Minister of Defence? The war economy grew into its shape and achieved its vitality through the energies and vision of these men. Let us openly recognise how much the country owes to them.

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Problems of Socialist England. By BERTRAND DE JOUVENEL. Translated by J. F. HUNTINGDON. Foreword by GEOFFREY CROWTHER. (London: The Batchworth Press, 1949. Pp. xvii + 221. 12*s.* 6*d.*)

THIS is a first-rate book. M. de Jouvenel visited England after the end of the war and observed the post-war political and economic scene. How easy it would have been for him, like so many of us here, to observe the trees and miss the shape of the wood; but this he has most successfully avoided. His book is not overburdened with detailed studies of particular English problems, but, in the opinion of the reviewer, it brings out clearly and sharply the *essential* problems which we in this country have to face.

The author visited this country in the autumn of 1946. His first chapters give his impressions of England at that time; later chapters bring his story up to the crisis of the summer of 1947 and the suspension of convertibility of sterling; and finally an Epilogue is added in this English edition of his book after the author had revisited England in the autumn of 1948.

What then are the salient features of our present position which M. de Jouvenel brings out so clearly?

First and perhaps foremost, he makes it clear that it is the changes in the external position of the United Kingdom rather than any specifically internal problems or experiments which are of fundamental importance to us. Politically this country was left after the war with no major power in Western Europe to share the front-line resistance to the totalitarian threat from the East of Europe. Moreover, this change in Europe has occurred at a time when in the Far East and elsewhere peoples who constituted part of the political and economic empires of Western Europe and, in particular, of this country have grown to full independence.

And this shift of external political power has coincided with a most profound shift in the external economic position of the United Kingdom. It is becoming increasingly difficult for anyone in this country to ignore the problems presented by our changed balance of payments position. But it shows wisdom when in 1946 a visitor to this country could assess so clearly as did M. de Jouvenel the extent to which the solution of our external problem must take precedence over all our internal problems if we are to preserve our standard of living and our greatness.

Second, M. de Jouvenel brings out clearly how the ideas (or might one not say "myths"?) on which much of our post-war economic policy has been based are those which Lord Keynes was preaching during the 1930s. An economic philosophy which was devised to deal with the world's worst deflation has been powerfully at work in the formation of economic policy during a period of intense inflationary pressure. And the prevention of mass unemployment has been the basis of much action during these years when the unemployment percentage has in fact been 1½%—or only one half of the figure which even the sanguine Lord

Beveridge considered to be the barest working minimum. M. de Jouvenel suffered from no illusions even in 1946 when he considered the inappropriateness of this philosophy. In his Epilogue written in 1948 he did himself, like many others, suffer from the illusion that Sir Stafford Cripps' Budget of April 1948 marked the end of the excessive inflationary pressure in this country and of the economic philosophy which went with it. Alas, alas, events have proved his judgment on this matter to have been seriously at fault.

Thirdly, M. de Jouvenel realises clearly (unlike some American Senators and some British Members of Parliament) that the nationalisation of coal, transport, gas, electricity and even iron and steel is almost completely irrelevant to the solution of our most immediately pressing problems such as the balance of payments deficit. Indeed, so convinced was he on this point that in the first edition of his book he simply omitted to mention the subject at all; and he mentions it in his later remarks only in order to explain that this omission was due to his belief that the matter was an irrelevancy.

It would be unfortunate to close this review on a note which might suggest that M. de Jouvenel has written a book simply on "Problems of Post-War England." His book is in fact called, and rightly called, "Problems of Socialist England." Reading between the lines of this book one can surmise that the author's English friends are to be found on the "left" rather than on the "right" in politics and that his sympathies are fully engaged in the Social Democratic experiment which the Labour Party is conducting in this country. Perhaps it is not to read too much between the lines of his book to suggest that the author would fully agree that the State should intervene in economic affairs for such broad purposes as the prevention of general inflations or deflations of total demand and the attainment and maintenance of a tolerably equitable distribution of income and property.

But what he certainly dislikes is the tendency on the "left" to supersede the working of the price mechanism and of ordinary economic incentives by direct controls which are bound in the end to lead to inefficient rigidity and to threaten progressively the freedom of the individual. Nor is he at all unaware of, or content with, the great and growing power of large trade unions, of vast industrial corporations (whether private or public) and of that final Leviathan, the State itself, over the individual citizen.

Is it a dream that the State might be able to achieve its legitimate broad economic objectives without any excessive apparatus of deadening "direct controls," but merely by exercising such an influence over the price mechansim as to give the individual the incentive to do freely what is in the social interest? That, at any rate, is the reviewer's own pipe-dream. But let M. de Jouvenel speak for himself (page 196) :—

> " If, as I have suggested elsewhere, (*L'Economie dirigée*, 1928), a planned economy in a desirable shape is possible, it must be one which makes profitable to the individual what is of advantage to society, so that he brings to the service of Society the entire stock of energy with which he seeks naturally to satisfy his own needs. A planned economy is a good thing when it makes social action materially rewarding, so that a man's own personal interest leads him to achieve it—becomes disastrous when it divorces social action from personal interest, and creates a state of things in which the commands laid on the individual are in flat contradiction to what it pays him to do. When that happens, it follows inevitably that individuals tend to do not what they are told but what is of advantage to them : and they embark on various illegal activities which are demoralising in their effect on character. Also it follows that Power must try, by methods of constraint, to force its subjects into the form of activity which it has imposed on them. The police and the black market darken the land."

Perhaps the author's French background has coloured somewhat the above expression; but for all that is not the judgment essentially correct?

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Problems of Economic Planning. By E. F. M. DURBIN. Foreword by the Rt. Hon. Clement R. Attlee. (London : Routledge and Kegan Paul, 1949. Pp. x + 214. 15*s.*)
The Socialist Tragedy. By IVOR THOMAS. (London : Latimer House, 1949. Pp. 254. 10*s.* 6*d.*)
The Principles of Economic Planning. By W. ARTHUR LEWIS. (London : George Allen and Unwin and Dennis Dobson for the Fabian Society, 1949. Pp. 128. 7*s.* 6*d.*)

EVAN DURBIN for many years up to his recent and tragic death had been the main philosopher of Democratic Socialism among the active members of the Labour Party. Mr. Ivor Thomas sees a head-on clash between Democracy and Socialism, and, as he leaves the Labour Party, dedicates his book : " To all Social Democrats in the hope that when confronted with the choice between socialism and democracy they will choose democracy." Professor Arthur Lewis writes a short book for the Fabian Society a reform of inheritance which will diminish inequalities of inherited wealth without drying up the mainsprings of the market mechanism?

Second, there is the argument that the free market will not take into account many social costs and advantages in undertaking certain lines of production (cf. p. 51). But cannot the modification of the free market by taxation or subsidisation where there are important divergences between the social and the private net advantage achieve as near an approximation to the ideal as the rather stultifying habits of planning on too large a scale?

Thirdly, there is the very important argument (p. 53) that socialisation will increase productivity by altering the attitude of the worker to his job when he no longer feels that he is merely working for someone else's profit. But are not there other means of achieving workers' interest in, loyalty to, control of, and even ownership of, the individual businesses in which they work without leading to state-owned monopolies?

If progress can be made in an economic policy for the " left " which does not ultimately involve the extensive state ownership and large-scale planning of most of industry, the whole sting would be removed from Mr. Ivor Thomas's critique of the policy of the labour government. Much of Mr. Thomas's book must be regarded as partisan polemics. The reviewer, for example, cannot take very seriously the account of the way in which in Russia in 1917 the Mensheviks were defeated by the Bolsheviks as evidence that social democracy in the United Kingdom in 1949 inevitably leads the same way as communism. But there is, nevertheless, a very powerful economic argument in Mr. Thomas's book: Socialism means nationalisation (p. 22); state ownership means the end of incomes from property and of private ownership of property (p. 26); this means the end of the profit motive as the mainspring of economic incentive, and all industrial activity must therefore be planned and directed by centralised decision (p. 27); and some element of private property and of competition among employers is desirable since " it prevents an excessive concentration of power in the hands of the state " and enables people " to pursue courses that they would not be able to pursue if they were tenants of a universal landlord or the servants of a universal employer " (p. 124).

To the present reviewer at least there appears to be much sound sense in this criticism, though Mr. Thomas is not so convincing when he goes on to argue that socialisation necessarily means the end of consumers' freedom of choice (p. 130). Indeed, much of Evan Durbin's book is concerned with showing that by adopting a suitable pricing and costing policy socialised enterprises could follow consumers' choice as well as private enterprises.

Professor Lewis's book suggests the way out for the liberal-minded members of the Labour Party. He believes wholeheartedly in the necessity for the State through its monetary and fiscal policies to preserve a high and stable level of monetary demand for goods and services in general and so on the one hand to achieve a high level of employment and on the other hand to avoid the evils of inflation; he advocates measures such as the reform of inheritance laws, a capital levy and greater equality of educational and social opportunities, to remove the worst inequalities without relying too heavily upon stultifying rationing schemes or the prohibitive taxation of earnings; he argues either for the socialisation of large monopolies or else for " trust-busting " and other social controls over business to prevent the formation of monopolies and the growth of restrictive business practices. But for the rest he wishes to get rid of direct controls over business and to minimise the field of socialisation; he desires to restore the market mechanism and the constructive forces of competition and private initiative; and he proposes that what particular interventions are still necessary in the social interest should take the form of taxes or subsidies to discourage or to encourage particular activities rather than direct prohibitions, quantitative controls or detailed bureaucratic regulations. In short, in his own expressive phrase, he wishes to plan by inducement and not by direction.

It would be wrong to give the impression that Professor Lewis's book is a short philosophical essay on first principles. Far from it. In the very brief compass of 128 pages the author manages to apply these principles to the present problems of the United Kingdom. He covers the distribution of wealth by rationing, by taxation and by inheritance; the fiscal and monetary policies needed to avoid inflation; nationalisation; the control of monopolies; foreign trade; and the encouragement of mobility of the factors of production and in particular of labour between different occupations and regions—unlike Evan Durbin, rightly placing very great stress on this last problem.

It would be impossible in the scope of this review to enter into a detailed criticism of the many and varied suggestions which Professor Lewis makes on these points. On some of them his proposals appear to the reviewer to be perhaps oversimple, and, the economic *organisation* of the backward country; in so far as such deficiencies can be overcome, the possibilities for investment are greatly enlarged, and a high rate of industrialisation need not be associated even momentarily with any diminution in consumption, such as might otherwise be expected. Clearly Mr. Dobb points here to an interesting question, and one deserving of more attention from economists than it has received to date. But the question is empirical, and accordingly it is of much interest to turn to the Russian experience in this connection.

As Mr. Dobb sees it, this substantiates his thesis. In particular, the First Five-year Plan provided not only for rapid industrialisation but steadily rising living standards as well. It is acknowledged that in fact living standards may have decreased under the plan; but this failure to fulfil the plan was due mainly to "extraneous" factors, such as collectivisation losses, which can hardly be considered as necessary concomitants of industrialisation. The plan itself then stands as evidence for the stated view.

But obviously there is an implied assumption here: that the plan as formulated was feasible to begin with, in the sense that the goals were mutually consistent, and the underlying assumptions realistic. Unfortunately, even a superficial inspection indicates many reasons to doubt this fact, including particularly the atmosphere of political controversy out of which the plan grew, and the fact that this was after all the *First* Five-year Plan, so that Soviet long-range planning techniques were in their infancy at the time. A careful study of all the evidence, I believe, would only strengthen this impression. It is not contended, of course, that "extraneous factors" did not limit Soviet progress in these years; rather that the goals of the plan probably could not have been fulfilled even under the best of circumstances. The bearing of the First Five-year Plan on Mr. Dobb's thesis, then, is obscure to say the least.

Almost inevitably, the record of Soviet economic development presented is controversial at many points other than those bearing on planning theory. There is for one thing the question of the Soviet aggregative production statistics in terms of "1926–27 roubles." Mr. Dobb uses these statistics extensively. As he notes, however, there are divergent views as to their reliability, and one wonders that his own review of the First Five-year Plan did not inspire greater caution in regard to these data. Originally scheduled to run through the fiscal year 1932–33, the plan was declared completed at the close of the calendar year 1932.

According to the aggregative production data in terms of 1926–27 roubles, it would seem that the Russians must have fulfilled the plan for heavy industrial goods : the index of aggregate capital-goods production in 1932 stood at 273% of 1927–28, or above the goal called for in the so-called " optimal variant " of the plan that was made official in 1929. Data on production in physical terms in a number of basic industries, however, show a quite different picture. The output of steel in 1932 was 148% of 1927–28, only 57% of the goal; of coal, 182% of 1927–28, only 86% of the goal; and of electric power, 268% of 1927–28, a spectacular increase, but still only 61% of the goal. Thus, referring to the production data in terms of 1926–27 roubles, Mr. Dobb is able to conclude that the Russians scored a " brilliant success " in heavy industry. Yet, referring to the data on production in physical units, he finds that " curiously enough " several basic industries were " laggards " (pp. 255–6). In trying to form one's own opinion of the apparent inconsistency in the Soviet data, account must be taken of two facts : (i) As already has been mentioned the goals of the plan may not have been closely integrated to begin with. Obviously under this circumstance, some discrepancies in the degree of fulfilment of different targets would have been unavoidable. (ii) While the accuracy of the 1926–27 rouble data has been questioned, the production figures in physical units generally are considered reliable by students of the Soviet economy.

A question must be raised, too, about the discussion of the Soviet labor legislation of 1940. This provided, among other things, for the legal attachment of a worker to his place of work, the administrative transfer of skilled workers and technicians from one place of work to another, and for the drafting of youths for vocational education and their subsequent compulsory allocation to industrial jobs. Mr. Dobb must be right in referring to the international situation of 1940 as a factor in the introduction of these draconic controls. But he neglects to mention that the 1940 legislation is still in effect. Under the Fourth Five-year Plan (1946–50), the so-called Labor Reserve Schools to which the youths are drafted are supposed to be the main source of new labor recruits in industry. Possibly the Russians now intend to continue the labor controls only for the duration of the reconstruction period. Yet other emergency measures, such as rationing, have already been abolished, so one suspects that some or all of the labor legislation may acquire a semi-permanent status. Soviet writers seem to speak of the labor draft in particular as an established rather than an emergency feature.

But I fear this review has been unduly critical. Mr. Dobb assembles and presents in systematic form in this volume a prodigious amount of information on practically all phases of Soviet economic life. This reviewer knows of no single volume to which one can turn for a more thorough account. Like his earlier study, the present one will be a standard work in the Soviet economics field for many years to come.

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Karl Marx—Critique de son Économie Politique. By C. VAN OVERBERGH. (Brussels: Office du Livre, 1949. Pp. 360.)

THIS is the first of two volumes, containing a preliminary survey, followed by a series of brief criticisms of Marx's economic theories point by point, and finally by a detailed criticism of the labour theory of value. A second volume, applying detailed criticism to the rest, is to follow. The work is frankly polemical; it is directed to making a case against Marx. So understood, it is well done. The summaries of Marx's position are admirably clear and concise, and the criticisms which follow them are pointed and well put. But M. van Overbergh sometimes forgets that Marx simply accepted the economic theory which prevailed in his day, and directs his criticisms (as so many critics do) rather at Ricardo than at Marx.

Marx disclosed in the Preface to the *Critique of Political Economy* how in 1842–43 he became engaged in economic controversies and proceeded to study economics because he was embarrassed by his own ignorance of the subject. M. van Overbergh quotes the passage (p. 18), and proceeds to put the question: did Marx study economics as an impartial investigator or as a partisan? To be convinced that it was as a partisan, he answers, it is enough to read *Capital* (p. 36).

This is an over-simplification of Marx's approach. He read Adam Smith and Ricardo in order to *learn* economic science, not to make any new contribution to it. What he read filled him with a new conviction. He saw the philosophy of history, which had been his principal intellectual interest, in a new light. Hegel's dialectical idealism gave place to dialectical materialism, in which the inherent contradictions of Capitalism were acclaimed as an inexorable disruptive force.

The *Communist Manifesto* and the abortive revolutionary movements of 1848 followed. Thereafter Marx returned to economics. Economic research became his primary occupation. But it was *applied* economics, directed to a verification of the Ricardian theories, not to any advance upon them.

Among Ricardo's doctrines it was especially the subsistence theory of wages that had inspired Marx. So long as the workman's remuneration is limited to his subsistence, while he produces more than his subsistence, there is a surplus. The material progress which improves productivity simply increases the surplus. The capitalist, in virtue of his command of the means of production, was in a position to secure the surplus for himself.

Marx devoted his researches to the detailed application of this principle. If he was more of a partisan than the economic historian who accepts a body of theoretical principles as given, that is only because the doctrine of the surplus had become the rallying cry of a party.

Marx also inherited from Ricardo the labour theory of value. In its pristine simplicity that meant no more than that a thing has value in so far as it is worth making. In the first volume of *Capital*, Marx took a quite untenable position in identifying labour value with exchange value. If what the producer received for his product was its labour value, the ratio of profit to capital employed would be widely different for different producers.

Ricardo had recognised that competition would equalise rates of profit. M. van Overbergh (pp. 291–2) quotes Marx's acceptance of this principle, in the posthumous third volume of *Capital*, and describes it as an " irrefutable attack " on the labour theory of value, " on which depends all that is essential of the Marxist political economy " (p. 132).

But what is essential is the surplus itself, not the manner in which it is divided among the industrialists and the owners of land and capital and the merchants.

In the *Critique of the Gotha Programme*, Marx explained that a communist society, on first emerging from a capitalist society, would determine remuneration by labour time. But this would be a survival from the old society, and in a higher phase of communist society it would be superseded by the principle : from each what he can, to each what he needs. Labour value, it would seem, is to be regarded not as identical with exchange value, but as a norm underlying Capitalism, to which the adoption of Socialism would, for a time of transition, give effect.

The doctrine of surplus value was founded on the subsistence theory of wages, a theory which " has been refuted by the doubling or tripling of real wages" since Marx wrote (p. 161). Marx, like Ricardo, admitted a certain elasticity of the concept of a subsistence wage. The value of labour power, he wrote (*Capital*, Vol. I, Ch. IV, 3), includes "a historical and a moral factor," depending on the "habits and claims" of the class of free workers. But he never reconsidered surplus value in the light of the later theory of marginal yield (p. 238). M. van Overbergh has much to say about marginal utility, but does not explicitly refer to the marginal yield of labour.

The theory of marginal yield does modify the theory of surplus value. If the growth of capital outstrips the growth of population, the marginal yield of labour rises, and with it the economic rate of wages. Ricardo had supposed economic expansion to press against the margin of cultivation, so that, though profits would fall, and money wages would rise, real wages would be unchanged. But technological progress or the opening up of new territory can relieve the pressure on the margin of cultivation, so that real wages can be doubled or trebled. Even so, there is still a surplus, but not so simply explained as Marx imagined.

The employer takes the responsibility of selling the product, and the price at which he sells must be such as to yield him an income after meeting overhead expenses. M. van Overbergh quotes Marx's assumption that "only the work of the manual labourer produces new value" (p. 123). But in the third volume *Capital* (pp. 449 and 450) the industrial capitalist, as differentiated from the mere owner of capital, is described as "a simple agent of the labour process, a labourer and specifically a wage labourer." Yet he is none the less an exploiter of the labour of others, and "the wages he claims . . . do not depend on the degree of his exertions in carrying on this exploitation."

Marx took little account of the labour of selling. He conceived the labour of the industrialist chiefly as that of management; the merchant was little more than a parasite claiming part of the industrialist's surplus. In under-estimating the importance of the business of selling, Marx was but accepting a prejudice of the classical economists, from which most of the economists of the present day have not freed themselves.

In capitalist industry he who can sell takes command, and he is in a position to insist on such a margin over costs as will secure his remuneration. His remuneration does not depend "on the degree of his exertions," because he can multiply his income in proportion as he multiplies his sales. However the marginal yield of labour and the level of real wages may grow, there must always be a "surplus" sufficient to secure adequate remuneration to the capitalist—a remuneration which depends not on his exertions or labour time, but on the volume of his sales, and, if adequate for the small business, is much more than adequate for the large.

Marx anticipated the collapse of Capitalism from two distinct causes: the sheer weight of numbers of the proletariat, and the contradiction involved in perpetual accumulation. He attributed the crises of the trade cycle to excessive accumulation. Here the prevailing fashion in economic thought follows Marx, and takes the wind out of M. van Overbergh's sails. His criticism is merely that the economic science of the present day has found "a policy of prevention and alleviation of crises, by wise and durable measures, founded on experience." If what he means is that the State, by taking the greater part of investment into its own hands, can counteract the effects of periodical over-accumulation, this is not a very convincing answer to upholders of Collectivism. Nor can this expedient be said to be "founded on experience." All that experience has shown hitherto is that the State can counteract unemployment by spending on armaments and war.

R. G. HAWTREY

London.

Economic Survey, 1919–39. By W. ARTHUR LEWIS. (London: George Allen and Unwin, 1949. Pp. 221. 15*s*.)

DURING the years 1944–47 Dr. Arthur Lewis lectured, to students of the London School of Economics, on the events between the two wars as background knowledge needed in interpreting the literature of the period, and from these lectures the present book, "an over-ambitious attempt to interpret the inter-war years in the setting of world economic history" has grown. The author goes on in his Preface to say that "it is not intended for professional economists at all." But when the Stanley Jevons Professor at Manchester produces a book on this subject, he must expect professional economists to take notice. My own suggestion is that many of them will find that three hours or so spent in reading the first two parts of the book are profitable hours.

Part I gives a chronological survey, mainly from a trade-cycle point of view. Part II gives some account of a few "national experiments"—the Blum experiment in France, the New Deal in America and so on. Part III attempts to put the events "into their setting. The pre-war world is brought in for comparison with its successor, and we come at last to grips with the fundamental movements." Parts I and II, like the title of the book, are reminiscent of the World Economic Surveys which the League of Nations Economic Section used to produce annually, and on which Professor Lewis has drawn freely. Like those Surveys, too, this book maintains a remarkably high standard of accuracy, as far as I have been able to notice. If I have a general criticism, it is that the book has been perhaps too much like those Surveys in being descriptive, which as annual issues they were bound to be. Many readers will have anticipated rather more substantial long-range interpretation than in fact emerges in the third part, though Professor Lewis might well plead that the events are still too near, the records still too faulty, to provide a reliable basis for interpretation. His lively mind cannot help, of course, emitting occasional sparks, and though his many little "lessons" (I had almost written "sermons") may irritate some readers, I myself found them generally acceptable and sometimes stimulating.

While repeating my admiration of the general high standard of accuracy, I may perhaps be allowed to query some shades of emphasis, especially in the field of British monetary history (a subject in which Professor Lewis has accepted the conclusions of Professor Seymour Harris a little uncritically). I find it difficult to believe that in Britain the 1919–20 boom was greatly aggravated by "inflationary financial policies" (p. 36). During the gold standard period (pp. 80–1) I should suggest that the rapid recovery of efficiency in Continental industry strained the British parity more than did the original overvaluation. The Macmillan Report's disturbance of confidence depended not merely on its exposure of the weakness of British gold reserves (p. 63); altogether more damaging was the discussion (especially in the Addenda) of the fundamental disequilibrium and the stress upon difficulties of removing it. The origins of London's weaker short-term position have never been convincingly elucidated: Professor Lewis relies (p. 43) on the common view that in the gold-standard period Britain was borrowing short to lend long, but does not mention the fact that war financing had left London's short-term position greatly weakened as far back as 1919. Finally, in his generally very fair discussion of the effects of cheap money in the thirties, the causes of the building boom are over-simplified: I should have at least mentioned the arrival of the country bus and the family car.

All these queries relate to shades of emphasis, and my few qualms about remarks on other countries were of the same kind, with the single exception of the analysis of Japan's problems (Chapter IX), where I am sure that the pressure of population should have been mentioned. On a more general matter, I found one statement that I can only describe as wild, on p. 174: "If the machinery for operating such stocks [international buffer stocks] had existed in 1929 there would have been no major slump, much higher standards of living all round, and no second world war."

I have felt bound to mention my queries, but this has left me no space in which to list the far more numerous points at which I think Professor Lewis's account and his judgment both just right. If his attempt is, in his own phrase, "over-ambitious," it is also true that his preface is over-modest, and most certainly he is right in saying that "the result of the book is to present a challenge to the students of to-day and to-morrow; that their researches may shine a clearer light on matters which now rest largely in obscurity."

R. S. SAYERS

London School of Economics.

Money, Debt and Economic Activity. By ALBERT G. HART. (New York: Prentice Hall, Inc., 1948. Pp. xviii + 558. $6.65.)

THIS is a first-rate text-book for a course on money and banking at a rather easy second-year level. My chief regret is that its price is now so astronomical that few British students will ever see it. My only doubt is whether a single text-book, however admirable, is really a good vehicle for teaching students. Professor Hart is extremely sensible and balanced on all the questions he treats, but a student may gain much more from reading a larger number of shorter works of authors who disagree or who say the same thing in different ways. The best of all solutions would be to take Professor Hart as providing the background and the guide to further reading. Unfortunately, the five hundred pages of this book constitute a considerable assignment of reading and, as no student who had absorbed them could fail to pass any second-year examination on money, I fear that the counsel of perfection would rarely be followed.

The book is divided into five parts, and it will be seen from the division how large a section is devoted to the general field of employment policy. The first part is "Banking and the Debt Structure" and provides an outline of the American banking system and of the controls to which it is subjected. The second part is the theory of variations in output as a whole. After a quick glance at index numbers, we consider the quantity theory, Keynes, cash-balances, anticipations and finish with inflation. The third part is the theory of employment and of economic fluctuations. This section is noteworthy for some fifty pages devoted to a review of the experience of the past (both here and elsewhere ample statistics are provided). Part four, devoted to international monetary relations, is much shorter than the other parts. Finally, the last part is devoted to stabilisation policy. Much space is devoted to panaceas (this is a very useful chapter) and to various formulæ, including the creation of automatic stabilisers (" built-in flexibility "). Professor Hart's view is that automatic devices are to be welcomed, but that they are not enough. They cannot be enough to *prevent* fluctuations, but I wonder whether we are really in a position to do better by the use of discretion. However, both views are fairly and clearly expressed.

The volume covers all the matter which can be properly thought to come within a course on money. But all the sections, save only the first, will also appear in some other course at about the same level of difficulty. Money, employment theory, international trade, public finance and some other courses overlap to a serious extent. Some overlapping is indeed to be welcomed : it will mitigate the students' dependence on a single source for each course, but the time available will not allow overlapping on this scale. I feel that the answer may well be to incorporate money and employment theory as a single subject, but to leave for separate treatment the international and public-finance aspects. The section on international monetary relations is the least satisfactory because it needs as a background a pure theory of international trade before it becomes intelligible. There is something unsatisfactory, too, in a treatment of direct taxation which praises a sharp progression on grounds of social justice and the stabilising effect of a source of taxation so sensitive to changes in income, but does not mention the likely adverse effects on the supply of effort.

In the present flood of American text-books, it is remarkable how successful have been those written by writers who have made their names through their original work. Professor Hart has fully maintained this tradition.

A. HENDERSON

The University,
Manchester.

The National Debt and the New Economics. By SEYMOUR E. HARRIS. (New York & London: McGraw-Hill, 1947. Pp. xvii + 286. 21*s*.)

THERE is in America to-day a strong feeling that the existence of a large national debt is a severe burden on the economy of a country. The feeling has not indeed been strong enough to enable the government to accumulate a budget surplus in the years since the war on a scale sufficient to repay a substantial amount of the debt. This objection to the accumulation of debt might well, however, prevent or delay the adoption of an expansionist policy at the outset of a depression. Professor Harris is disturbed by this prospect, since he believes that the maintenance of a high level of employment in the United States depends on net-deficit financing over the whole period of a trade cycle. He has therefore undertaken an investigation of the whole problem of the national debt, aimed principally at the non-specialist, in order to appraise the advantages and disadvantages of deficit financing and the concomitant rise of the national debt. This involves him in a wide range of inquiry, covering *inter alia* the methods of a fiscal policy aimed at full employment, the theory of taxation, the assessment of the debt burden and the technical problems of the management of the debt. Looked at from this side of the Atlantic it seems rather a lot to peg on to the National Debt; we have so many more pressing worries that most of us have forgotten the debt burden—except in so far as it is owed to foreigners in the form of sterling balances. Under American conditions, however, the emphasis is perfectly sensible; the economic problems facing America are so much less pressing than ours that they can, and do, devote time to deploring the fantastic figure of the National Debt, as our parents did in the 1920s.

Much of the discussion of fiscal policy for full employment is based on Lord Beveridge's *Full Employment in a Free Society*, and especially on Mr. Kaldor's Appendix. Yet Professor Harris seems to do less than justice to the case for tax remission in a depression (pp. 40 and 100–1). He argues that tax remission will be more expensive, in that it will require a large deficit to achieve the same results, than a policy of public works and that "it fails in that it pays scant attention to distributive justice" (p. 100). This neglects the fact, which the author mentions elsewhere, that taxation in both Britain and America is regressive in the lower ranges, so that tax remissions are available which will both meet egalitarian requirements and increase the post-tax incomes of people who are likely to spend as much as the beneficiaries from a public-works programme. Tax remission still requires a larger deficit than public works—but fewer white elephants! More important than this, he neglects all the evidence of inefficiency in public-works programmes and the case for using unemployed resources for producing the things which consumers want rather than the public works that can be started quickest.

The author appears rather more pessimistic than most authorities would be to-day about the chance of maintaining a high level of employment through fiscal policy without any large growth of the national debt. The use of pre-war data to forecast post-war savings suggests so high a level of saving in America at full employment that it could hardly be matched by private investment. It is clear, however, that these estimates of post-war saving are far too high, and it seems possible that, over the average of a trade cycle, employment might be kept high without any serious growth of the national debt. But, if one does accept the pessimistic view that deficits will greatly exceed surpluses, is there much to be said for the traditional form of the national debt? It is possible for Professor Harris to show that it is better to incur the debt than the unemployment. There are, however, ways of avoiding both, and it becomes a matter of urgency to find them if we are to enjoy a series of large deficits. The solution lies in some form of 100% money which can be created by the government to meet its requirements without the interest burden of the present debt. So long as money creation is not multiplied by the creation of bank money, there is no need for a deficit to be accompanied by loans to the government. Solutions of this kind and the use of the capital levy are not considered by Professor Harris, who leaves his reader to choose between unemployment and a growing debt.

The book contains a great deal of useful information for the layman in search of enlightenment. I must confess that I found its main argument hard to disentangle from the mass of interesting detail. This failure to bring out the simple general principles and a certain looseness in formulation reduce its success as a means of educating the intelligent layman. Despite all qualifications, however, it remains a very well-documented introduction to public finance and fiscal policy.

The specialist, too, will find much to interest him in this volume; an adequate survey of much of the discussion and a wealth of factual data. As a work of reference it suffers from the fact that statistics are usually presented in the form of graphs, while the figures on which the graphs are based have not been included. A further difficulty arises from the rather uncritical use of forecasts, both British and American, of post-war demand.

Finally, may a disciple of Lord Keynes protest against the use of the words " the New Economics " to mean the doctrine of the " General Theory " and of its successors ? When a thinker of genius has turned his attention to a subject, there is always some justification for claiming that a revolution has occurred. It is doing no service to the new ideas to make claims for them which will be hotly disputed by those who believe that they contain little which is both new and true. Assessment of the novelty of Keynes's ideas is better postponed for later judgment when the conflict between the Keynesians and the anti-Keynesians has died down. If Professor Harris and his friends would claim a little less that day might come sooner.

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Controlling Factors in Economic Development. By HAROLD G. MOULTON. (Washington : The Brookings Institution (London : Faber & Faber), 1949. Pp. xii + 395. 29*s*.)

IN this book the President of the Brookings Institution applies to the problem of economic growth the results of research undertaken by the Institution since its incorporation in 1927. The reader must accordingly be on his guard against ideological bias, arising on the one hand from the Institution's sympathy with conservative American business philosophy, and on the other hand from its vested interest in its own under-consumptionist explanation of tendencies towards economic stagnation. Both preconceptions find ample expression in the present volume, which must, in consequence, be regarded as a statement of a point of view—and a peculiarly American point of view—rather than as a fully generalised study of growth problems.

The author " is concerned equally with the factors which impede and restrict, and those which generate and promote, economic advancement." The treatment is in two parts—the past century and the next hundred years—but, as usual, crystal-ball-gazing proves to be no more than projection of trends, and the argument may be discussed as a unit.

The source of economic progress Dr. Moulton finds in two factors : the growth of science and its application in technology and capital formation, and the establishment of the proper institutional framework. The latter comprises corporate business organisation, expanding bank-credit, fixed international currency-values, low-level balancing of government budgets and restriction of governmental functions to legislation of the rules of the competitive game.

Within this framework, according to Dr. Moulton, progress may be retarded by business depressions and chronic under-consumption. On depressions, he has little to say : he is eclectic on the subject of causation, and sceptical on the subject of cure, confining himself to the statement that " the need is to establish confidence that a tenable bottom has been reached." On under-consumption, he presents the " Brookings version " : savings tend to be excessive, not as the result of a Keynesian " psychological law," governing the propensity to consume of the average individual, but as a consequence of increasing concentration of income in the hands of the wealthy as income increases, and the fact that the percentage of family income saved is higher in the higher income groups. The Brookings version differs from the *General Theory* in two other respects : the analysis of saving and investment is improved by distinguishing three separate decisions—in Brookings-ese, money-saving, market-investment and capital-formation —and it is contended that consumption rather than investment controls the level of economic activity, on the argument that investment derives from consumption demand. The latter leads to the conclusion that income-redistribution rather than public works is the cure for stagnation, the favoured method being price-reductions as opposed to wage-increases.

Even if one is prepared to forgive certain stylistic annoyances indicative of careless writing, Dr. Moulton's presentation of his material leaves much to be desired. The argument is loose and uneven—as if the author were uncertain of his readership—and the evidence is handled in an unscholarly way. The achievements and possibilities of science are catalogued without adequate attention to cost calculations, and the argument for private competition is supported by crude statements of principle and cruder citations of instances of governmental ineptitude. Viewed solely as a research production, the book raises in acute form the question of the value of this type of institutionalised research.

Nevertheless, Dr. Moulton has something important to say about economic growth. It lies in his contention that capital formation is the medium through which productive technique is improved, that it has a qualitative effect in reducing cost or increasing output which is on balance more significant than its quantitative effect in increasing the ratio of capital to natural resources. In other words, capital accumulation is subject to a law of increasing returns which outweighs the law of diminishing returns. It is on this contention that Dr. Moulton explains the failure of the classical economists to foresee the great economic advance of the last century, and by means of which, interestingly enough, he demonstrates the profoundly " classical " character of the long-run predictions of Keynes's *General Theory*. It is, finally, the basis of his conclusion that in a hundred years' time the United States could support double its present population at eight times the present standard of living.

In emphasising the innovatory role of capital accumulation, Dr. Moulton draws attention to a neglected aspect of economic progress : theoretical discussions of growth problems have too often assumed that capital accumulation can be dealt with in the static framework of given production functions. It is a pity, however, that he has not carried the analysis to its logical conclusion. Logically, qualitative changes on the production side imply qualitative changes in consumption patterns and standards, and raise the problem of how the latter come about; yet the " Brookings version " in effect retains the concept of given utility functions, arguing merely that unequal income distribution inhibits the classical approach to satiety. For a discussion of qualitative changes in consumption, we must still turn to Veblen or Knight, or to the dynamic implications of external diseconomies of consumption.

HARRY G. JOHNSON

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Produktivität als Wirtschafts und Staatspolitische Aufgabe. By K. ALBRECHT. (Tübingen : J. C. B. Mohr, 1949. Pp. 40. DM 1.50.)

THE author of this book on " productivity as economic and political task " is the Director of the Research Institute for Economics at the University of Tübingen in the French Zone of Germany. The title of the book is revealing; the author considers the improvement in Western European productivity, especially in France, England and Western Germany, not only as an economic but also as a political task in the development of a " Third Force " between the United States and the U.S.S.R. Both these countries, in the author's view, are in a stage of rapid increases in productivity.

The book contains descriptive sections on French and English policies towards raising productivity. The purpose of this is defined (p. 37) as " serving as an example and stimulation " for Western Germany. The French section is largely based on the Monnet Plan and stresses the low rate of voluntary savings in the French economy. The section on England is largely based on the report to the O.E.E.C., resolutions of the T.U.C. Congress of November 1948 and on statements by the F.B.I. English readers may feel that the author is perhaps over-impressed by the vast array of measures listed, from the Anglo-American Productivity Councils to the extension of technical training, and also by the recognition of productivity problems at the top levels of the trade-union movement and the employers. One feels that he does not quite realise that there is a long way from the formulation of top-level policies to their realisation by rank-and-file efforts. Thus, when he declares that British trade unions have now realised that " what matters is not maximum employment but to have square pegs in square holes and to give preference to the competent worker " (p. 25), one can only wish that it were so.

It is also worth notice that while the author calls the British austerity programme a manifestation of " admirable national discipline," he is very worried about the European repercussions of British austerity, and hopes that this policy will be pursued only " for a brief transitional period and not as an objective in itself."

To English students of productivity the book may be mainly interesting for some data on productivity in Western Germany which it contains. The figures which he quotes as compiled by the Ministry of Economics in North Rhine–Westphalia show an amazing increase in productivity between 1947 and 1948. One suspects that this increase is due to an understatement of production in the pre-currency-reform era, not only in the case of consumption goods (as is recognised by the author) but also in the case of capital goods.

At times one cannot help feeling that the author falls victim to a certain confusion between total production and total productivity. This is especially apparent in his consistent stress that the low productivity of Western European countries contains a threat to the prosperity of the raw-material-producing countries and thus to world economic stability. It seems clear that it is total European production which determines the rate of consumption of raw materials, and that, in fact, economy in raw materials may be an indication of a particular type of progress in productivity rather than of low productivity. There also seems some contradiction between the author's insistence that a low rate of domestic production may create inflationary tendencies with further secondary adverse effects on productivity (p. 5) and his declaration on the same page that foreign credits only postpone the problem. In so far as lack of domestic supplies causes further reductions in productivity, it follows that to that extent foreign credit would also be a genuine solution and not only a postponement of the present productivity problems.

H. W. SINGER

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The Bank of Ireland, 1783–1946. By F. G. HALL. With an Architectural Chapter by C. P. CURRAN and Biographical Notes by JOSEPH HONE. Edited by PROFESSOR GEORGE O'BRIEN. (Dublin: Hodges, Figgis. (Oxford: Basil Blackwell), 1949. Pp. 523. 63*s.* and 18*s.*)

STUDENTS of banking and currency have always been much interested in the Irish banking system, and that for three reasons. In the first place, the Bank of Ireland has a unique place among the commercial banks of the British Isles, and throughout its history has played an important part in Irish banking and finance. Secondly, in the nineteenth century, especially from 1845, the history of joint-stock banks in Ireland shows their general soundness, and contrasts favourably with the laxity of the previous century and indeed with the history of joint-stock banks in England and Scotland. Thirdly, until 1826, there was a separate Irish currency wholly dependent on the British currency, but not at par with it. The British shilling was equal to thirteen Irish pence, with the result that, as the author of *The Bank of Ireland, 1783–1946* points out, " although all commercial business was transacted in terms of local currency, payment was ultimately made in English coins at the official exchange ratio." In short, the Irish £ was a money of account for domestic transactions, and this led to curious denominations of notes. For example, the Act of 1799 specified a note of 3*s.* 9½*d.*, such amounts being required to make the Irish note correspond to the rounded figures of British currency. All of these points are touched on in this history, which is, indeed, more than a history. It is an authoritative record of Irish banking and currency since the foundation of the Bank one hundred and sixty-seven years ago. The facts have been assembled well and fall into a clear pattern. It is easy to trace the road which the Bank of Ireland has travelled since 1783.

The history of this treatise, for it is nothing less than a treatise, is described by the editor, Professor George O'Brien, in the preface to the book. He states that in 1941 during the governorship of Sir John Keane, he was requested to make a preliminary survey of the historical material available in the archives of the Bank. The Court Minute Books were copied, calendared and indexed, and in 1945, Lord Glenavy the Governor, requested Professor O'Brien to carry the work further. Dr. F. G. Hall was appointed to write the history of the Bank, and this, with the chapter by Mr. C. P. Curran describing the architecture of the Head Office in College Green, Dublin, and a chapter by Mr. Joseph Hone of biographical notes on the Directors of the Bank, together with thirteen appendices and eighty-seven illustrations, complete the book.

The Bank of Ireland was originally projected in 1695, a year after the Bank of England, but the plan was not carried out. It was again rejected, this time by the Irish House of Commons in 1721, and it was not until sixty-two years later that the Bank was established during the period of the Protestant Ascendancy in the heyday of Gratton's Parliament. Throughout its history the Bank has shown much wisdom combined with a wise tolerance—the Court admitted in 1830 Roman Catholics as soon as it was permitted to do so—and to-day the Bank is pre-eminently the Bank of Ireland, not only in Eire but also in Northern Ireland. In its early history it occupied a leading place, as its first Charter, modelled after the pattern of the Bank of England, gave it the virtual monopoly of the banking business of the country. The Charter prevented banks with a greater partnership than six persons having the right of note issue from being established. As the author points out, this exclusive privilege had the same effect on banking in Ireland as the Charter of the Bank of England had in England. It prevented strong banks from being formed, so that in a crisis the smaller banks went to the wall. Gradually this monopoly was curtailed, but the Bank of Ireland was always *primus inter pares*. In 1824, permission was given to banks with more than six partners to be formed at a distance of fifty Irish miles from Dublin, with the power of issuing notes. It was only in 1845 by the passing of the Bank Act of that year that the Bank of Ireland's monopoly was taken away and permission was granted for the formation of banks having more than six partners to be formed in or outside Dublin. It is clear from Dr. Hall's narrative that the Bank of Ireland became a semi-State bank, but not, like the Bank of England, the final lender in a crisis—indeed it had to fall back on the Bank of England. With the amalgamation of the Exchequers and National Debts of the two countries, the final assimilation of the currency in 1826, as already noted, and with the growth of joint-stock banking from the 1820s, the Bank of Ireland changed its character. To-day, however, although one of the eight commercial banks in Eire, it is not an ordinary commercial bank. It is the banker of the Government, and it manages the public debt. At the same time, it competes with the ordinary commercial banks, having numerous branches and sub-branches established in various towns, both in Eire and in Northern Ireland. Dr. Hall working on the original material made available to him has brought these important facts clearly before the reader, particularly the rise of joint-stock banking in the nineteenth century. It is interesting in this connection to note how the Act of 1820, which permitted the establishment of joint-stock banks, led to sound banking and to comparatively few failures. The Provincial Bank of Ireland, which began business in 1825, is a good example of the banks formed in this period, and did not the Westminster Bank when it was in search of its first General Manager appoint Mr. J. W. Gilbart, the Manager of the Provincial Bank's branch at Waterford, as its first executive head in 1834? He is sometimes better known as the author of *The History, Principles and Practices of Banking* published in the same year.

Two general criticisms may be made here. It is a pity that Dr. Hall did not use the original material that must be available regarding the creation of a Mint for Dublin. After the Restoration the privilege was granted, but cancelled on the protest of the Mint in the Tower of London. The petition was repeated after the Revolution with a demand for a separate Irish currency. This was again defeated in 1693. Another appeal in 1698 was, as the documents in the Public Record Office in London show, defeated. Sir Isaac Newton was then Warden of the Mint. In 1701, when he was Master, a new approach was made, and Newton, his opposition perhaps softened by the influence of William Molyneux, consented to a compromise proposal of a temporary establishment. The project was once more defeated. It would have been of much interest to have had the arguments as they doubtless exist in the papers in Dublin to-day. Perhaps Dr. Hall will deal with these on a future occasion. The other critisicm is that the intensely interesting history of the last twenty years including the creation of a Central Bank might have been given in greater detail and not in the brief form that it has in the last chapter, Chapter IX, dealing with the Bank of Ireland Acts of 1929 and 1935 and the Central Bank Act. By this Act of 1942 on and after December 31, 1956, the Central Bank will control the entire circulating media of the country. The commercial banks then will cease to enjoy the right of circulation which they now possess. This Act also authorises the Central Bank to receive deposits from a Minister of State or any public authority, but this power has not been used, the Bank of Ireland still continuing to hold the Exchequer account. Perhaps as Dr. Hall ends his account of the Bank in 1946, he did not wish to stress the importance of the Central Bank, an apex Bank, in recent years which works in perfect harmony with the Bank of Ireland. He rightly describes the report of the Commission which led to the creation of a Central Bank as "a monumental work which will long remain the standard treatise on Irish monetary and financial affairs."

The chapter on architecture by Mr. C. P. Curran shows how the Bank of Ireland possesses one of the most beautiful buildings in the whole of Europe. When the Act for the Union of Great Britain and Ireland received the royal assent on August 1, 1800, the Irish legislature, which had lasted for one hundred and nineteen years, came to an end and the buildings of the Irish House of Lords and House of Commons were purchased by the Bank in 1802 for £40,000. The illustrations already referred to show the buildings on College Green. The biographical notes by Mr. Joseph Hone are unfortunately a little incomplete, especially as regards recent Governors, who are dismissed in a few words. Thus, under Sir John Keane we have, "At present a Director, appointed 1928, Governor 1941–43" and under Lord Glenavy, "At present a Director, appointed 1932, Governor 1945–." It may be there has been a self-denying ordinance on the part of the present Directors which is unfortunate, as some of them will go down to history as more than equal to some of their predecessors. The biography of David La Touch, whom Gratton described as "one of the five just men," is an excellent thumb-nail sketch of the first and one of the greatest of Governors. His descendants, like those of Charles Halliday, who receives an unusually long biography, have played, it may be noted, a great part in the Indian Civil Service as administrators and men of affairs.

The Court of Directors, Professor O'Brien, Eire's leading economic historian, and the author are to be congratulated on producing a volume which will be a counterpart of Sir John Clapham's monumental history of the Bank of England, published five years ago. The book is certainly worth buying, reading and keeping.

G. FINDLAY SHIRRAS

Ballater.

The Australian Economy in War and Reconstruction. By E. Ronald Walker. (New York: Oxford University Press. (London: Geoffrey Cumberlege for Royal Institute of International Affairs), 1947. Pp. ix + 426. 30*s*.)

This book gives a systematic and informative account of the Australian economy during the war. It both tells the detailed story of what was done to put the economy on a war footing and explains the reasons for the specific measures of economic policy adopted by the Australian government. It also makes an interesting attempt to forecast the main developments in the country's industrial structure and economic institutions which are likely to occur—especially in view of the modifications brought about by the war—both in the near and in the more distant future.

Dr. Walker's account of Australia's economic development during the war is enriched by his wide knowledge of the pre-war economy and by his personal observation and inside knowledge of its war-time transformation, which he himself, as one of the war-time economic planners, helped to shape. During the war he was one of a small band of economists who were drawn into the service of the Commonwealth Government, largely from the staffs of the universities, both to act as economic advisers and to occupy leading administrative posts in government departments. There they were responsible not only for initiating policy but also for building and operating many of the war-time administrative controls through which the necessary changes in the economy were brought about. As Deputy Director-General of the Department of War Organisation of Industry, Dr. Walker was in a particularly favourable position for gaining a comprehensive knowledge of the developing war economy and its problems and for learning what was happening in other departments. For his was essentially a planning department, responsible in a large measure for co-ordinating the competing claims on the nation's limited industrial resources.

The book consists of three parts. Part I discusses the war economy regarded as a whole, with special emphasis on the problems that were peculiar to Australia. Its central chapter gives a general account of the war-time economic developments set out in chronological order. There are interesting chapters also on the federal system of government in relation to the war economy and on the machinery of war-time administration. Part II sets out in detail the war-time changes in each of the various branches of the economy taken in turn, together with the reasons for the government policy from which they largely arose. The story of the government's intervention in these various branches of the economy is told concisely and clearly. Part III, which is largely descriptive and explanatory, discusses some of the problems of post-war reconstruction. The most interesting chapter, on Australia's economic future, attempts to forecast what type of economic system will emerge, how far Australia will try to go along the road towards self-sufficiency, and the consequences of these two issues for economic welfare.

In itself, the history of the war-time administrative changes will no doubt be chiefly of interest to readers in Australia. But indirectly the book will be interesting and useful to readers outside Australia and to others besides economists. Those who wish to understand Australia's post-war economic problems and to judge her economic future will find in it much information that is indispensable, especially on the subject of economic controls. Others, even among those who are not particularly interested in the Australian economy as such, will find the book valuable because of the light which it throws on the difficulties of central economic planning in a democracy. But in writing for such a mixed audience Dr. Walker felt obliged to include a certain amount of explanation, notably in his discussion of the general features of a war economy in Part I, which economists may find a little tedious. The unfortunate result is that some important matters have had to be dealt with even too briefly. An outstanding example of this is the discussion of the pre-war economy and its institutional framework in the very first chapter of the book, where such an important matter as the system of wage-determination, which was to have a vital bearing on financial policy, is not even mentioned. It is only fair to say, however, that Dr. Walker appears to be uneasy over the meagreness of his treatment of these pre-war conditions.

Although the book is based on published information, Dr. Walker's personal knowledge of the government policies and events with which he is concerned gives additional interest and authority to his interpretation of them. But this has its disadvantage. For parts of his account of the transition to a war economy tend to be too much influenced by his knowledge of departmental intentions. He thus unconsciously gives the impression that the problems were more clearly visualised, and that the various policies were more neatly co-ordinated, than in fact they were. This applies especially to his account of the work of his own department, whose difficulties and frustrations were not in origin all external to itself.

Dr. Walker is more concerned with the outward forms of economic change—with government decisions and the administrative and institutional changes arising from them—and less with their economic content, than might be expected from the title. There is disappointingly little analysis of the quantitive effects of the events and policies discussed. But much of the necessary statistical information for that purpose has not been made public, or had not been when the book was written. Besides, the author's main interest, as he says in the preface, was in " such matters as seemed particularly significant for the socio-political problems of re-shaping the economy from peace to war, and from war to peace again."

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Japan's Economy in War and Reconstruction. By JEROME B. COHEN. (Minneapolis : University of Minnesota Press, 1949. Pp. xix + 454. $7.50.)

THE potentialities of Japan's economy, despite its meager resource endowment, were given impressive display in the last war. It is this war economy and its post-war remains upon which Dr. Cohen, formerly of the United States Strategic Bombing Survey and now at the College of the City of New York, performs a competent economic autopsy. His study is based upon data collected by the Bombing Survey; but it is far more complete and offers a more sophisticated level of analysis than is contained in any of the Survey's reports on Japan. Replete with a wealth of statistical data, Dr. Cohen's volume is the most comprehensive review of Japan's war and occupation economy yet produced.

As regards the war economy, Professor Cohen's central thesis is that Japan's war plan hinged on a sudden, paralysing attack and a short war with the United States. Before America could recover, Japan would negotiate a peace which would insure it control of its war-created " Co-Prosperity Sphere " in the Far East, rich in raw materials and potential markets. Japan's war plan was necessarily based on a short war, for it was primarily dependent upon stocks of reserves : it would be helpless if a war of attrition cut off coal and iron ore from North China, oil and bauxite from the South Pacific. He documents this thesis not only with interviews with chief Japanese planners but also with a mass of statistical data as well. For instance, armament output at the end of March 1943 was but 14·0% greater than output at the end of December 1941.

It was not until the beginning of 1943, after the shock of the Guadalcanal defeat, that the "limited program" approach was abandoned. Production sights were lifted generally. By September 1944, armament output reached a peak nearly double that of December 1941. Equally notable, in 1944 war expenditures took about half of the gross national product as compared with about 30·0% in 1942.

The impressive last-ditch effort of the Japanese people came too late, however. Failure to lay adequate emphasis upon merchant-ship construction early in the war aided in the breakdown of the vital sea-transport system. By end-1944 Japan's original merchant fleet of 6 million tons had been whittled to under half that tonnage. Oil reserves for this fleet, and the navy, were down to a few month's supply by April 1945, with no imports arriving.

In contrast to shipbuilding, aircraft output had progressed favorably until late in the war. During the fiscal year 1944 about 26,000 planes of all types were manufactured, an increase of two and a half times 1942 production. After April 1944, airplane output was checked by diminished bauxite supplies and assembly lags. During the entire war, however, Japan produced 65,000 military planes compared to the United States output of about 300,000 airplanes.

General raw-material shortages after 1944, as imports dwindled, caused a widespread fall in production. Steel output was a prime limiting factor on the overall economy throughout the war, due to deficient supplies of iron ore. By mid-1945 sea and air blockade had so weakened Japan's industrial power that steel production was at an annual rate of but 1·0 million metric tons, or less than 10·0% of capacity.

What stands out boldly, as Sir George Sansom points out in his foreword, is that Japan was primarily defeated by a sea-blockade before strategic bombings in force were under way. Allied strategic bombings were important in determining the timing and submissive nature of the surrender rather than the ultimate fact.

The fiscal–financial aspects of Japan's war economy are given about two dozen pages in the 400-odd pages devoted to the war economy. Debt-financing directly by the Central bank was heavily relied upon. Throughout 1941–45 tax revenues never exceeded about a third of annual budgets. Dr. Cohen is not accurate, however, in his statement that there were no great drives to induce widespread bond ownership among the public (p. 81). In addition to intensive bond-sales measures, a large part of the debt was indirectly financed by the small savings of the masses through the Government Deposit Bureau, a postal savings system widely used in Japan.

Dr. Cohen marshalls a substantial amount of evidence to buttress his " short war " thesis, but it is in the use of fiscal data that several bits of contestable analysis appear. For example, he states " Government war expenditures and capital (munitions) outlays . . . rose from 17·0 per cent of gross national product in 1940 to 30·5 per cent in 1942. Thus even in 1942, the first year of war in the Pacific, the United States war effort surpassed that of Japan." (P. 55.) Such a comparison, even if allowances are made for incomparability or conceptual differences in the national-income estimates, overlooks a few things. First, all the percentages tell is proportion of resources devoted to the war and not " effort " in the sense of denial of resources to non-war uses. The comparison obscures the fact that the United States " effort " was accomplished with no quantitatively unfavorable effects upon the consumption component, whereas the Bombing Survey figures on Japanese " real " gross national products used by Dr. Cohen (Table 6) show the Japanese consumption component down about 12% over the period. Secondly, the comparison neglects the fact that Japan, by 1942, was making use of a sizeable amount of war product, " contributed " by her colonies and conquests, not included in the domestic percentage.

The gross national product figures, in 1940 prices, prepared by the Bombing Survey and used by Dr. Cohen, allow us for the first time to make an " order of magnitude " appraisal of the " real " financing (or cost) of the war comparing four major belligerents for most of the war period.

The table (p. 148) gives the percentage distribution of the real financing of the war cumulated from the last peace-time year to the peak war year for each country. The reader may observe other interesting aspects, but for our point, the data indicate that the Japanese people bore directly a greater part of the real cost of the war by far than either the United Kingdom, Germany or America.

Thus Japan's defeat cannot be attributed to lack of willingness on the part of Japan's people to endure sacrifice and self-denial. From Dr. Cohen's study these appear to have been the major economic reasons for Japan's defeat : effective submarine action, accentuating the inherently weak resources position of Japan proper; the ensuing air attack, which disrupted production; weak administration and planning, particularly in the early war years, which prevented the later notable productive performance of the Japanese from being more telling.

	Japan, %.	U.S., %.	U.K., %.	Germany, %.
Real financing of the war derived from :				
Larger output	41·0	100·0	40·0	44·0
Decreased consumption	41·0	−17·0	24·0	18·0
Decreased Government non-war expenditure	−3·0	3·0	2·0	38·0
Decreased or drafts on capital investments	21·0	14·0	34·0	
	100·0	100·0	100·0	100·0

Note : Minus signs show increases. Japan data computed from Cohen, *op. cit.*, Table 6. U.S. and U.K. data from *Economist*, May 5, 1945, p. 594. Germany from U.S.S.R.'s Special Paper No. 1, Fig. 2 and A. J. Brown, *Applied Economics*, Table XII, p. 64. Although the deflated data are based on 1940 for Japan, 1938 for the U.S. and U.K., and 1939 for Germany, examination of price indices over the period does not indicate enough price rises to invalidate the order-of-magnitude comparison. Data exclude Lend-lease for U.K. and foreign "product" for Japan and Germany; interest on public debt excluded. Figures rounded.

To turn now to the post-war, Dr. Cohen's dissection of the occupation economy through 1948 is the most thorough this reviewer has seen to date. Unfortunately, however, perhaps due to the lack of a central thesis as characterised the war economy discussion, the treatment of the Occupation often lacks the consistency of argument applied to the war period.

Dr. Cohen rightly attacks the indecision that marred United States policy for Japanese reparations. Reparations proposals varied successively from the Pauley Report of April 1946, recommending about 2·5 billion yen (1939 prices) of capital equipment reparations, to the United States announcement of last spring scrapping the removals program indefinitely.

Dr. Cohen appears to favor institution of the relatively drastic Pauley recommendations over the later, more lenient, proposals. But if the crux of Japan's recovery lies in revival of Japan's export trade—and Dr. Cohen's contention here is generally accepted—surely removal of all aluminium capacity, three-fourths of its machine tools, and similar large-scale removals from the other remaining operable productive capacity that claimant nations would want (as proposed in the Pauley Report), would not reduce Japan's dependence upon American aid.

The chief problems of Japan's foreign trade to-day relate to reorientation of this trade (especially on the import side) away from the United States, and expansion of its level to sustain a greater population of 80 million Japanese.

Raising the level of trade bristles with internal and external difficulties. Expansion of Japan's exports for the last three years meant acceptance of multiple exchange rates (used until the adoption last summer of a unitary rate of 360 yen to the dollar). As Dr. Cohen points out, the expedient contributed to the internal inflation through the necessity for government subsidies and the system's covering of high-cost producers. It was also counter to State Department–Treasury predisposition towards a unitary rate of exchange.

But pre-occupation with Japan's solution as being one of expanded exports overlooks the broader problem. The solution to Japan's balance-of-payments deficit depends, of course, not only on her own export capacity, but also on the availability of the imports she requires in the areas purchasing her goods or on the convertibility of the currency of such areas into dollars. The conditions of availability and convertibility probably have to be remedied in a wide sphere before Japan's solution can be found.

Yet Dr. Cohen rightly views the initial problem of Japan's recovery as one of recovery in the Far East generally. He states : " Real economic recovery for Japan would be greatly aided by the formulation of a comprehensive and coordinated program for the revival of all Far East economies along the lines which the United States is now pursuing in Europe." (P. 504.) Integration of Japan's economy with those of other American-aided Far Eastern countries is a necessity. But to state that an integrated economic recovery program for the Far East as a whole should be pitched along the " lines which the United States is now pursuing in Europe " is unrealistic economically and politically. A " balance-of-payments " approach, an E.C.A.-for-Asia, wherein the U.S. would undertake to foot the dollar-deficit necessary to assure a minimum living-standard for Asiatic countries living at (or even below !) the subsistence level, and constantly beset by the Malthusian specter, is beyond political realities in America and, indeed, perhaps beyond American resource capacities for any length of time.

Instead of an E.C.A.-type program, American aid should be pitched around a Point Four, long-range developmental concept. Such an effort might accomplish what Dr. Cohen emphasises the United States should offer : a co-ordinated Far Eastern policy that insures Japan the economic viability necessary for its own and regional development, while at the same time insuring the controls needed to keep Japan from ever threatening the security of its neighbors.

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The Economy of Ceylon. By Sir Ivor Jennings. (Bombay and London: Oxford University Press, 1948. Pp. ix + 224. 10*s.* 6*d.*)

This unpretentious little book is addressed to the layman. Its purpose appears to be twofold: to present some elementary economic concepts and considerations, largely in order to dispose of some crude but widespread economic fallacies current in Ceylon; and secondly, to acquaint the reader with an outline of the economic structure of the country. Sir Ivor Jennings writes with an easy and fluent pen, and the book should largely attain its purpose. It is also informative and stimulating outside its immediate aim. There is an instructive account of conditions in rural Ceylon (Chapter V), based largely on the excellent Reports on the Economic Surveys conducted in these areas, with shrewd observations on the perplexing problems facing the attempts to improve conditions in the villages. The chapter on industrialisation is also suggestive, and conveniently illustrates the difficulties of a programme of early and rapid industrialisation. Scattered in the footnotes there are numerous references to sessional papers of the Ceylon State Council, as well as to other official documents, and these amount to a useful bibliography on the economy of the country.

There are, however, notable shortcomings. While much compression and omission was clearly unavoidable, the selection of the material is open to criticism. Data on minor matters are presented in considerable detail; thus the costs of some small colonisation schemes are shown to the nearest rupee, and some figures of the national finances are actually shown to the nearest rupee cent. Yet in a book on the economic structure of Ceylon there is no information on the occupational distribution of the population, nor on the areas under different agricultural products, to mention only two important omissions, on both of which the required information is available. In the discussion on the principal plantation industries, the estates are apparently regarded as synonymous with the industry, to the neglect of the appreciable acreage of rubber and coconuts in the hands of smallholders. This seems to vitiate an otherwise interesting discussion on the proportions of Ceylonese and foreign capital invested in these industries (pp. 26–7). The interpretation of statistics is not always fortunate. It is misleading to suggest that the comparatively modest fall in the price of rubber from the famine heights of 1925 to the still very high levels of 1926 was the result of overproduction and depressed economic conditions (p. 43); or that the decline in the price of copra after 1925 resulted from excessive competition. The author insists that he is no economist, but at times he strays into fields whose complexities and pitfalls he does not realise fully.

It also is surprising to read (p. 109) that in the staffing of European enterprises in Ceylon colour preference plays no part (indeed to suggest that it does is, in the author's view, " slightly amusing "), since the selection of the personnel is governed solely by commercial considerations. This may be so, but is so contrary to general impression that it needs to be supported by some evidence or further argument.

The account of rural Ceylon and of the problems of industrialisation in Ceylon is most likely to interest readers of the Journal.

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L'Agriculture en Grande-Bretagne. 2 vols. By Guy Traversin. (Paris : Centre National d'Information Économique, 1949. Pp. ix + 252 and 224.)

THIS is a painstaking and comprehensive survey of British agriculture in many of its aspects. Indeed, its comprehensiveness is puzzling, since it includes sections on income tax and national insurance, on control of retail food prices and on the National Trust. For what public is this work intended? It will not be of much use to a student of agriculture, since there is little discussion of physical features or technical matters. More than eighty pages are given to a description of the legal and administrative frame; less than twenty suffice for an account of the physical background with all its regional variations. It is indeed true that the north-east of Scotland is a coastal region whose summers are a little fresh and whose agriculture is based on a combination of oats, turnips and cattle, but that is hardly an adequate description of a region famed for the technical competence of its farmers in a number of enterprises other than those thus briefly mentioned. Nor, in a work of this length, should the diverse and intensive farming of the fens be dismissed in five lines with a reference to wheat, potatoes and sugar-beet. Nor does the author anywhere describe that combination of sheep with arable which, before the war, was a frequent enterprise on many light soils; and he has failed to grasp the importance of hill breeds of sheep, such as the Welsh Mountain, the Cheviot and the Blackface, in providing the foundation stock for the cross-breds that grazed the pastures and fattened on the turnips of many lowland farms.

Possibly M. Traversin's compilation is designed for students of economics and of comparative administration. It will provide them with a mass of facts and figures on recent trends and a convenient though short list of references (occasionally mis-spelt) to original sources. Yet the very detail of the information may prove confusing to such readers, since it is unrelated to any discussion of economic principles or current problems. The author notes the preference for the tenancy of a large farm to the ownership of a small farm, but this, to him, surprising feature is not related to the relative profitability of farming and of land-ownership. Elasticity of demand is mentioned in relation to wheat prices in the seventeenth century but not to the problems of the Milk Marketing Board. He describes the annual price reviews which take into account the costs incurred by farmers; elsewhere it is noted that minimum wages are fixed at levels which take into account the economic circumstances of agriculture; the political and economic problems raised by the conjuncture are not mentioned. The work is painstaking and oddly comprehensive, but hardly illuminating, nor does it give an adequate picture of the rich diversity of farming life and practice to be found in these islands.

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The Great Pierpont Morgan. By LEWIS ALLEN. (London: Victor Gollancz, 1949. Pp. x + 306. 15*s.*)

IT is the fashion to-day to regard such a man as J. P. Morgan as an anti-social force, a malignant not even a benevolent tumour in the business world. Yet Mandeville said that private vices are public benefits, and it is doubtful whether the wealth of nations would have been built up without the initiative and predatory instincts of the "Robber Barons." In going out after wealth for themselves they created wealth and a savings deposit for the public.

It is debatable whether a love of order or a love of power was the driving force behind Morgan's acquisition of wealth. When Robert Oppenheimer said, "It was a very exciting experience when I first learned of the atomic theory, of valence and the periodic system—these wonderful regularities which reveal the deep order of nature," Mr. Morgan would have understood what he felt. If man is made in God's image, the creators of Trusts cannot be blamed for also desiring to bring order out of chaos. Mr. Lewis Allen sees Mr. Morgan as this regularising and disciplining force in American industry.

In the Battle of Susquehanna between the cohorts of Gould and Ramsay, Mr. Morgan saw an object lesson in the disorderliness of competition which he never forgot. This phrase, " the disorderliness of competition " became the *idée fixe* in his mind from now on; and it was the explanation of all his future business activities. Competition *is* disorderly, but as Judge Starlan said in summing up the decisions of the Supreme Court of Justice in the leading Anti-Trust cases in March 1904, " The natural effect of competition is to increase commerce; and an agreement whose direct effect is to prevent the play of competition restrains, instead of promotes, trade and commerce." Mr. Morgan genuinely thought competition to be damaging. " Damaging " was ever afterwards to be the connotation in his mind to " competition."

Mr. Lewis Allen quotes John Mitchell as saying that " he was credibly informed that Morgan was friendly to organised labour. As an organiser of capital he concedes the right of labour to organise." His love of order thus was extended to his opponents, even to the curtailment of his power over them. When George F. Baer said to the strikers in the anthracite mines that " the rights of the labouring man will be protected and cared for—not by the labour agitators but by the Christian men to whom God in His infinite wisdom has given the control of the property interests of this country" a similar statement at the present time would be greeted with mirth and contumely; but in the context of his age it is not beyond the realms of possibility that Baer believed in what he said.

Mr. Morgan's ability to keep his deep sense of religion and his business in apparently unconnected compartments in his life would be irritating to the modern mind. Is it a sense of equity or a proof of a vindictive nature to be pleased that Mr. Morgan was called to account before the Pujo Committee before he died?

When Mr. Morgan said to Mr. Rainsford, the Vicar of St. George's Church, " I want it (the vestry) to remain a body of gentlemen whom I can ask to meet me in my study " he, in fact, described what he wished the business world to be. He thus reduced, in his mind, the whole size of the world of business to that of a vestry meeting, a body of gentlemen whom he could ask to meet in his study, and—let us be frank—a body of men he could dominate. That he deliberately locked the door of this study to prevent the heads of the Trust Companies leaving before they had come to a decision in the great panic of 1907 proved that he looked on them as a pack of schoolboys of whom he was the head master. His supposition may have been correct, for it is indisputable that Morgan, in the words of the author, acted during this panic as " a one-man Federal Reserve Bank."

It was after Mr. Morgan had been to see President Theodore Roosevelt concerning his prosecution for breach of the Sherman Act, that the President turned to Attorney-General Knox and said: " That is a most illuminating illustration of the Wall Street point of view. Mr. Morgan could not help regarding me as a big rival operator who either intended to ruin all his interests or else could be induced to come to an agreement to ruin none." The governmental worm was beginning to turn. The clash between the authority of Government and the authority of big business had started. The situation has been very well put in the words: " If the great corporations do not stop swallowing up small businesses the country will, through its government, swallow up the big corporations."

It is indisputable that Morgan used the sheer weight of his personality and formidable will to brow-beat his opponents into submission just as Hitler did some years later. Yet he was capable of tenderness, as his marriage to the dying Mimi showed. That his sentimental feeling for the New Haven Railroad led to one of his few financial failures is an ironic twist in the history of this man.

He had a certain love of beautiful things, yet one cannot help feeling that his great art collection was fundamentally the result of his talent and mania for acquisition. He and Roger Fry never understood one another. Yet if Morgan had had a real love of the imponderables he and Roger Fry would have had a common meeting ground.

But there is no doubt that the majority sentiment of the people is overwhelmingly against the existence of these large industrial combinations which were the ideal of J. P. Morgan. As Mr. Vanderbilt told a reporter: " A public sentiment has been growing up opposed to the control of such a great property (The New York Central) by a single mass of a single family." Public indignation has a habit of becoming a righteous indignation which asserts that such power is more than a good man should want or a bad man should have. When a man is born who has the business ability of a Kruger, the moral integrity of a Halifax, and the humanity of a Bach we will have a man in whose hands we can safely entrust such power. " The Great Pierpont Morgan " was not such a man. As John Dos Passos says " we have not learned how to put power over the lives of men into the hands of one man and to make him use it wisely."

Mr. Lewis Allen has been scrupulously fair to his subject. When the battle between individualism and State control is raging all over the world, this is not always easy. This book is singularly, and mercifully, free of all propaganda. Mr. Lewis Allen has stated his facts. He has left it to his readers to draw their own conclusions.

IRIS HARVEY

The Miners : A History of the Miners' Federation of Great Britain, 1889–1910. By R. PAGE ARNOT. (London : Allen & Unwin, 1949. Pp. 409. 21*s*.)

THIS volume has been written under the auspices of the National Union of Mineworkers, and is presumably meant to have a sequel carrying the story forward through the critical period of the miners' movement that began with the big strikes of 1911 and 1912, and passed into a new phase when the Miners' Federation was transformed into the National Union of Mineworkers only a few years ago. It ought also to have a predecessor, covering the records of the miners' movements before the formation of the M.F.G.B. in 1889 ; for no adequate account of these earlier developments has yet been published—none, especially, of the National Union which flourished for a time in the 1840s, or of the extensive agitations and organisations of the 1860s and 1870s. Mr. Arnot gives a very brief account of these earlier phases ; but it does not pretend to be based on any original research, and is too slight to give even a good general picture. This makes it the stranger that he has chosen to illustrate the present volume almost entirely with pictures relating to this earlier period, and wholly unconnected with his text.

Even for the period which he does profess to cover, his work is none too satisfactory. He has made use of the central records of the Miners' Federation and of a few scarce pamphlets and reports as well as of the obvious published sources; but he seems to have made no attempt to use the more abundant records of the County Associations and regional Federations of which the M.F.G.B. was made up. Consequently, he gives no real picture of the Miners' Unions at work, with all their important local and regional differences. His narrative of events on the national plane—or rather on the plane of the area effectively covered by the M.F.G.B. —is adequate, but lacks vitality because of this divorce from the local movements except where they come to the front in connection with national issues. The plain truth is that Mr. Arnot, though he has the advantage of writing reasonably well, has not done nearly enough work to provide a foundation for a satisfactory book.

This does not mean that the book lacks interest. Its account of such matters as were handled nationally, or became issues for debate in Parliament, is usually clear and well put. This applies particularly to the long struggle for the legal limitation of the hours of labour, in which Northumberland and Durham were for so many years opponents of the Federation's policy, partly on principle, but mainly because the hewers who dominated the Unions in the north-eastern counties feared that legislation might jeopardise the concessions they had won by negotiation for themselves, but not for other grades of mineworkers either below ground or on the surface. The record of the eight-hours struggles, indeed, dominates a large part of the book. Other matters that are dealt with adequately include general wage movements, the development of parliamentary representation and the Miners' International from its beginnings in 1890.

The illustrations, in addition to those already mentioned, include portraits of a good number of miners' leaders from Thomas Hepburn to Robert Smillie; and these are accompanied in most cases by lively pen-pictures—a good proportion drawn, almost unsupplemented, from a single pamphlet source. These latter bring out very clearly the character of the miners' leadership during the " Lib-Lab " period when most of the County Unions and Federations were being built up; but they are no substitute for what is missing—an account of the diversified local backgrounds against which these men fought their fights and the Unions at length consolidated their hold. Compared with many trade-union histories, this is a competent piece of work; but it could have been much better, and gives the impression of having been finished off in a hurry, with no further research, after the work done for it before 1939 had been interrupted on account of the war.

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Economics of the Labor Market. By JOSEPH SHISTER. (New York: Lippincott, 1949. Pp. xxiii + 590. $4·50.)

THIS book deals with labour conditions in the U.S.A. and the methods by which these conditions are regulated. The conclusions which the author draws are derived from the legislative and institutional background of industrial negotiation in that country. There are few of them which could be applied without modification to the circumstances prevailing elsewhere.

The book covers a very wide range. Nearly two-thirds of it is concerned with the composition of the labour force and the history, structure and objects of the institutions which aim to regulate and control the labour market. A large part of this section, as is to be expected, is devoted to trade unions. The importance of government policy is, however, also stressed not only in relation to the legislative encouragement of collective bargaining but also in relation to social security. In describing the part played by management, the author seems more impressed than other recent writers with the growth of employers' associations and the extent to which they participate in collective bargaining. It would still appear, however, that collective bargaining through employers' associations is infrequent in the major industries, that the scope of such employers' associations as do exist is rarely industry-wide, and that the collective bargaining which they conduct on behalf of their members is usually for a town or region rather than for the country as a whole. Moreover, the author states, the majority of the firms which do negotiate agreements collectively through employers' associations administer them as individual units with the trade union concerned. The distinction is an important one, and contrasts sharply with the procedure in this country. There is no doubt that the part played here by employers' associations and trade unions in administering the collective agreements which they have negotiated and in interpreting and enforcing their terms is a fundamental factor in ensuring such measure of freedom from industrial disputes as we have enjoyed.

There are many reasons to account for the slowness of growth of the trade-union movement in the U.S.A. and one may question whether its five-fold increase in the last 15 years is the result—at any rate to the extent that is commonly believed—of the legislative developments of that period. Some of the reasons advanced in this book, however, to explain the trend of trade-union membership are confusing and unconvincing. Thus we find on one page the suggestion that a period of prosperity in the 1920s when the workers could improve their real earnings without trade-union intervention was a reason for slowness of growth of trade unionism. On the next page we find the depression of trade given as a reason for decline in membership from 1929 to 1933. Four pages later we find the suffering and privation to which the depression had subjected the workers assigned as a main reason for the spread of trade unionism both in the moderate recovery from 1933 onwards and in the 1937 recession.

On the whole, however, this section of the book, dealing with the institutions of the labour market, presents a clear and interesting picture of the parties and policies operating in the settlement of industrial conditions in the U.S.A. and of the historical reasons which have influenced their development. In a book which is otherwise well constructed there is a strange section dealing with union–management co-operation, interesting in itself but repeating not only arguments but even quotations which have already appeared in an earlier chapter. The explanation, no doubt, is that the section in question is based, as the author tells us, on his essay in *Insights into Labor Issues*, a symposium published in 1948. It would have been well had the author taken a little more trouble to dovetail this section into the argument of his present book instead of incorporating his previous essay largely verbatim.

The last sections of the book consist of a survey of the operation of the labour market and the author's conclusions in the course of which he examines what he regards as the shortcomings of existing wages theories and propounds his own, suggests measures for controlling unemployment of various types, and considers the possibility by means of wages policy both of counteracting the inflationary tendencies inherent in policies of full employment and of lessening inequality in the distribution of income. His general conclusion is that, under the existing institutional structure of the U.S.A., there is little hope by means of wages policy of dealing effectively with the organic problems confronting society in the labour market—by which he means unemployment, the maintenance of stability once full employment is attained, and a reduction of the existing inequality of income distribution. These problems, in his view, can be solved effectively only by a greater degree of governmental intervention. He makes a plea for acceptance of what he describes as " a minor degree of government participation when the occasion arises " as the alternative to " a serious challenge of some form of collectivism."

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Politics and the Press c. 1780–1850. By A. ASPINALL. (London: Horne & Van Thal, 1949. Pp. xv + 511. 42*s.*)

WE took up this book with the hope that it would be the political counterpart of Dicey's *Law and Opinion* with its single central idea, the transition from Benthamism to Collectivism, aptly illustrated from literature and law. But it is very different. It contains a wealth of political detail—political in the sense of party politics, and it shows how statesmen and governments treated and were treated by the Press. Professor Aspinall, as we know from his other studies, has a matchless knowledge of the manuscript correspondence of the period : he is as omniscient here as his hero, Brougham, and much more judicious. The treatment is indicated by some of his sub-titles : Government Subsidies and Treasury " Hirelings "; the Government and the Press; the Opposition and the Press; Newspaper Circulation; the Growing Freedom of the Press; and all this not only for the London Press, but for the Irish Press, Protestant and Catholic, and (very sketchily) the Provincial Press.

One criticism cannot be suppressed. There is an infinity of trees, but it is desperately hard to see the wood. The author, I think has struggled against this defect, for at the end he gives us a brief general view, which lies buried under the mass of detail in the text.

> " Since the end of the eighteenth century, the newspaper had been transformed. When Pitt was in Downing Street a newspaper was merely a small commercial speculation designed primarily to advertise new books, quack medicines, theatre programmes, auction sales and shipping news. It contained only a few paragraphs of news and no leading articles; and its sale was measured by hundreds. The expansion of trade and industry, and, consequently of commercial advertising, which had been hindered, indeed, but not prevented, by the heavy tax on advertisements, rescued the newspaper Press from its dependence on Treasury subsidies or doles from the party headquarters, gave the newspapers large and increasing sales, and an ample revenue which enabled them to become financially independent " (379).

This was what the Press had been. But into what had it changed by 1850? This Professor Aspinall does not clearly tell us, but concludes with a bald summary of the removal of the restrictions on the freedom of the Press, including the repeal of the "taxes on knowledge" between 1853 and 1861. I have recently had occasion for a special purpose (the Great Exhibition) to read the *Daily News* for 1851. Two features stand out: the fullness of the Parliamentary Reports, column after column of speeches, with the vote at the end—in fact, a Hansard of the leading speeches; and every day a great column of railway securities, with traffic receipts, price movements, notices of new promotions, amalgamations and the like. Advertisements are still paltry, except in relation to railway bills. The leaders on the topics of the day, public health, papal aggression, continental politics, are brilliant; and the paper is steadily free trade. The only paper at all like it to-day is the *Manchester Guardian*. There are practically no head-lines. But there are many amusing tit-bits. On the day the Exhibition opened, May 1, 1851, the Provost and Fellows of King's College, Cambridge, announced to the nation that their College would henceforth forego its time-honoured privilege of taking without examination the B.A. degree.

Professor Aspinall is exceptionally strong on the way in which the newspapers pestered the politicians, and how difficult it was to keep them in order. Ireland supplied a most extraordinary example in 1851–52. The Lord Lieutenant Clarendon got himself into the position of being blackmailed by a hireling and on the advice of the Chancellor of the Exchequer paid back from his own means the £1,700 secret-service grant which he had paid to the rascal. Luckily (declared Lord Clarendon) "the affair cost the public nothing, but he himself paid dearly both in money and annoyance for having meddled with the Press" (377).

We have, most of us, I take it, read the three noble volumes of *The Times History*. Professor Aspinall helps us to place this relation to its rivals. The breach with the Tories over the Six Acts, the breach with the Whigs over the New Poor Law were blows which the Government found it hard to offset by the support of other journals. *The Times* was slowly but steadily working up to the great days of the Crimea, when it might almost be said that it ran the country. As Professor Aspinall reminds us, *The Times* knew, and had known since 1815, that the way to make the paper pre-eminent "was to develop a news service superior to that of all rivals" (77).

There is a bouquet for Cambridge, with which we close. *The Morning Journal* (July 24, 1829) is speaking.

> "The *Globe* is a gentleman—it has been educated at Cambridge—therefore it is a gentleman, and when we differ from it our language is respectful. We treat the *British Traveller* in the same way; but as to the *Courier* and the *Post* it is impossible to award them any other sort of cool politeness than that of contempt" (227).

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NOTES AND MEMORANDA

POINTS AS CURRENCY

RECENT studies of points as an alternative currency have concentrated on the attitude towards them of final consumers and have assumed that at that place in the system they could, in fact, be regarded as a form of currency and would behave as such. But to the majority of consumers, to those, that is, who do not deal in points in the black market, the exchange value of points in terms of legal currency is the least important aspect of this war-time addition to our media of exchange. To them points are simply an administrative device for controlling the expenditure of the only currency they recognise—pounds, shillings and pence.

It is within the trading and administrative worlds of points rationing, where goods flow forward and points back to a Ministry, where these flows are to serve as guides to policy, that there is, or may be, a presumption that points are currency and valued in terms of goods. The object of this note is to explore how this presumption works out in practice.

In presenting what follows, sundry explanations and apologies are in order. First, it is based only on experience of the points system for rationing food. Second, my close administrative connection with this system ended in May 1942, and although I continued to see documents connected with it for another three years they were not complete. Third, I have now no access to official papers and must rely on memory alone. While what I have written does accurately represent the impressions that I formed at the time, it may well be that they are less valid for the later stages of the story which I did not see at close quarters.

The system of points rationing for foodstuffs was introduced as a means of controlling the distribution, from first-hand distributor to the final consumer, of certain commodities which were in short supply but at the same time were not readily capable of being brought into the existing system of individual rationing, either because, in fact, the supply was so short or because they were not in universal demand. The system was regarded as being very flexible, the points "price" of different foods being adjustable in successive rationing periods so as to increase or reduce demand for particular kinds and so to direct consumption into the desired channels, while at the same time retaining the largest possible element of free consumer choice. Indeed, a very favourite expression of the protagonists of this form of rationing was that the points system would work " just like money."

But in the circumstances of a legal market the phrase has to be interpreted with considerable caution. For the " market," in the technical sense, in which a points-rationing system is working has certain differences from the " market " in which the operations of a freely functioning price mechanism are being registered in terms of currency.

In the latter case the assumption is that variations in consumer choice will be transmitted through the channels of distribution from the final retailer to the first-hand supplier, and will there call forth changes either in the amount supplied, or in the supply price, or in both. Similar changes may also originate at the suppliers end, but these may or may not be transmitted down the chain to the final consumer. The extent to which changes in first-hand prices are passed along will depend on a variety of circumstances. Here only one will be mentioned, namely the extent to which the respective units of currency and commodity can be combined to produce a gradation of prices at which transactions can actually take place. I would call this the " grain " of the price system, so that when the grain is " coarse " the steps by which prices change are wider than when it is " fine." This grain is normally finer at the wholesale than at the retail end, and this relation affects the transmissibility of price changes. Where the retail price of flour normally changes by 1*d.* per lb., it is not likely to be affected by a wholesale price change of ¼*d.* per bushel. In the case of eggs, a price change of less than 2s. 6*d.* per long 100 cannot be exactly reflected in the retail price per dozen, or per egg, and may therefore, in certain circumstances in a free market, not be reflected at all; nevertheless, in such a market, wholesale-price changes of this order of smallness frequently took place. But when prices are controlled all along the line of distibution, with fixed margins for each type of distributor, the situation alters. Because, for example, the smallest step by which the retail price of eggs can be changed is 3*d.* a dozen, the smallest possible wholesale change is 2*s.* 6*d.* per long 100, and, moreover, changes must be made only in steps of 2*s.* 6*d.* per long 100. Thus the price grain is both uniform and coarser than in a free market, and this applies both to money prices and to points prices.

This uniformity of grain in the first significant aspect of the points-rationing system, coupled with the fact that the basic price, on which the others depend, is a retail price, fixed that is to say in terms of small quantities, per lb. or per single can, not per ton or per gross. This in turn makes the grain of the points-pricing system to be coarser than that of a free monetary system, with which it is so often compared. The need to allow for small purchases, *e.g.*, of ½ lb. or ¼ lb., made it impossible to change the points price by less than 2–4 points per lb. Because this would have involved enormous changes in the wholesale pricing, it produced from the start an inflexibility in certain prices, which, in turn, made it rather more difficult than was at first expected to translate the theory of the system into action. This difficulty was not made less by the small number of points distributed per person in the early stages, *i.e.*, 16–24. Later, when the points-banking system was inaugurated this could have been removed; quadrupling the points issue and the points balances at a given date would have raised the individual allotment to at least 64 per person and made possible changes by single points per ounce. But by that time the public had got used to the 16-, 20- or 24-points scale, and the arguments for leaving things as they were proved overwhelming.

In order to start a points-rationing system supplies have to be moved to strategic spots in the chain of distribution with the intent that thereafter the flow of goods shall be governed by the movement of points from retailer through wholesalers to first-hand distributors and finally to the Ministry as the *fons et origo* of all rationed foods. The pulse of the machine in the Food Ministry (during the period referred to and doubtless still) resided in a monthly meeting at which experts of the points system and representatives of the commodity divisions concerned met together to decide the monthly allocations of points to the public, of commodities to the trade and the points "prices." The information before them comprised :—

(*a*) the supply and offtake of the preceding month ;
(*b*) potential supply and offtake of the ensuing month ;
(*c*) total of points available to the public to be satisfied ;
(*d*) the degree of " consumer satisfaction " in the preceding month.

Two features in this list deserve mention. First, the meeting did not generally have before it, although during discussion this might emerge, the number of points being actually offered by first-hand distributors for the several commodities. In view of the monetary theory of the system this was somewhat surprising. Second, consumer satisfaction. This was a return made through the Ministry's Survey Branch designed to show how far the available supplies were satisfying the demands of consumers. This was expressed as the percentage of consumers who were able to get what they wanted at the first time of asking. (Although theoretically points goods were obtainable anywhere, the practical dominance of the " registered customer " made it rather useless to make a second attempt at a shop at which one was not registered.) The degree of satisfaction varied for different foods and from time to time; *e.g.*, rice remained for a long time pretty steady at 98%, while dried fruits generally stuck in the low 30%s, indicating a considerable excess of demand over supply.

In such circumstances the presumed function of the monthly meeting would be to vary either the points prices of various foods, the total number of points to be issued to the public or the amount of commodities put into the machine through first-hand distributors. Points values and points issues were, indeed, varied from time to time, but I have the impression, which research might confirm or confute, that such variations were rather less frequent than theory demanded or might have led one to expect. Reference has already been made to the tendency to inflexibility of prices; there were evident administrative disadvantages in varying too frequently or widely, and without some variation in the range of foods covered, the total number of points available to the consumer. Thus it would seem to be necessary that the volume of input should vary. Theoretically this was possible, for although supplies were short and there was little room for manœuvre, yet some room could obviously be made in so far as the Ministry was ready to sustain moderate increases or decreases for short periods in the level of stocks. There were strict limits to this possibility, however, for even long-term conditions of supply were rather rigid, and the variations of supply needed to meet either variations of offtake by consumers or of demand by first-hand distributors backed by the offer of points proved to be larger than the system could meet. Yet if the scheme was to work " just like money " it was just this last-named demand that ought to have been met or moderated by price changes. It was in its inability to do either of these that the scheme diverged most widely from its theoretical basis.

On the subject of inputs the designers of the scheme seem to have made two assumptions, first that the volume of input in each individual case would be based on the number of points offered by first-hand distributors, second that such inputs would be passed instantaneously through the system to retailers.

This second assumption was wrong on two counts. In the first place the time taken for an original distribution by the Ministry to get from the first-hand distributor to the retailer was always over 4 weeks. Thus an input which had been calculated with reference to the presumed offtake of one month might actually meet the offtake of the next but one, or at least find itself forming part of two monthly periods. Commodity Directors could allow for this in a fairly broad way, *e.g.*, inputs of currants for the Christmas trade could be made around the end of October. But the gearing of the points scheme demanded closer quantitative relations. Secondly, the time interval was not the same for all foods, for some moved faster than others, and this increased the difficulty of exactly relating inputs to offtake. In theory, of course, there was a perfectly good administrative answer to any complaint that supplies of a particular food were failing to come through to the effect that the system was designed to meet just that contingency, for the consumer could always buy other foods if his first choice was not available so long as the total points value of the input was equal to the total points in the hands of consumers. But this last proviso demanded that the rates of flow of all foods should be uniform, and this was not so. The position was made practically insoluble by the introduction of the transport-zoning scheme, which was designed to economise the use of transport by restricting the cross-country movement of commodities. As an objective this was sound, and the means taken to achieve it not ineffective. But its very success cut out many opportunities of meeting regional variations of tastes. Nor was it possible, administratively, to introduce regional variations in points prices, although this would have done something to smooth out various oddities, such as the strange behaviour of Grade 1 salmon and the disappearance of syrup in Scotland while it flowed freely in southern England.

Moreover, if the flow of goods from inlet to outlet was slow, the reverse flow of points from retailer to first-hand distributor was rapid. This affected the first assumption mentioned above, which was really the basis of the whole system, namely that the volume of any given issue of food by the Ministry should be related to the number of points offered by the first-hand distributor and to the wholesale points price.

In order to carry out this assumption it was necessary that there should be an uniform system of distribution for all commodities, and that either the quantities or the points prices should be variable. Now it was clearly intended at the start that all commodities should be distributed on the basis of points surrendered by distributors and that either prices or quantities should be varied so as to bring supplies and points into alignment. But difficulties arose early because there was already in existence for each commodity a system of distribution based on some other criterion, usually 1939 datum figures or current sugar registrations. Neither the trades nor the Ministry were particularly anxious to initiate changes that would have upset the internal balance between individual traders. Thus within the limits of available supply the quantities distributed were generally fixed on some basis other than that of points offered by first-hand distributors.

A further difficulty arose from the fact that there was no uniform method for converting the basis of distribution that was actually adopted in any given case into a valuation in terms of points so as to secure the surrender by first-hand distributors of the points which their allocation represented. In some cases supplies were issued on credit, *i.e.*, to be paid for by points later secured. For the time being, therefore, points in the hands of distributors, who were generally dealers in more than one kind of points-rationed food, were available to back a demand for other kinds. Thus as various commodities were successively brought into the scheme the later arrivals came under the pressure of unspendable points which were shifted from those foods distributed on a 1939 or some other non-points basis.

Two ways were open, in theory, to meet this situation, to vary the amounts supplied by the Ministry or to vary the points prices. But although as has been said above there was some possibility of varying the quantities supplied, yet the scope of such variations was obviously limited, especially upwards; it was always easier to reduce than to increase the quantities issued. At the same time it was not practically possible to mop up all the points offered by raising the points price, for with a coarse-grained price system this would have killed retail sales.

The result of all this was that the nearest the points system came to working " just like money " was to exemplify a " controlled inflation." There was a steady provision of points " currency " to consumers, which they used, in whole or in part, to obtain various foods. But the supply of foods into the system was not based on points offered by first-hand distributors, but was determined by the long-term policy of particular Commodity Divisions and was split up among individual distributors, generally speaking, on the basis of their 1939 trade, for all attempts failed to base first-hand distribution strictly on points. Thus there accumulated at various places in the chain of distribution, though more generally among wholesalers and first-hand distributors than among retailers, masses of points "purchasing power" which they were unable to use and exerted a pressure of demand which bore perpetually on the Divisions of the Ministry responsible for issuing commodities to the trade.

These accumulations took place because of various lags in the system to some of which reference has already been made. There was the lag in paying in points for quantities issued. There was the difference between the velocity of circulation of points one way and of commodities the other. To some extent also points piled up in the scheme because commodities were sometimes carried on in the scheme after importation and distribution had stopped, and as stocks in hand ran out demand was shifted on to other commodities. Conversely, when a new commodity came on, stocks and goods in transit became windfall points capital, for the administrative difficulties involved in taking inventories and charging for them were insuperable. Some retailers grossly mismanaged their points, and not once but frequently. This meant that points accumulated in the hands of the cleverer retailers, but, again, it was not possible to let the foolish ones stew in their own juice, and sooner or later there had to be some more points doled out all round. Wholesalers, quite illegally, gave points credit, and this could never be stopped, for even when one was caught it was impossible to get the theory of the system appreciated in a court of law. Even after the institution of the points banking system, the pruning of excessive accounts was a long and difficult process. And behind all this was the reluctance of wholesalers, and even more so of retailers, to accept the theory of the system. They did not want the measure of free enterprise involved, therefore they were always clamouring for more points, never seeing that by so doing they made the position worse instead of better.

To sum up, I would submit the following considerations.

Any study of points as currency must not disregard the implications of rationing itself, the problems of administration and the difficulties that arise from a "coarse-grained" pricing system. When these are brought into the picture it may well appear that points can never behave "just like money," or insofar as they do, it is money minted in a Shachtian rather than a Marshallian mould.

As for points rationing as a system of controlling distribution, it may be said that for the administrator it does offer a possibility of varying the public's, propensity to consume certain types of commodity. But the problem of fitting supply to demand, as indicated by the offering of points along the line of distribution, will provide perpetual administrative headaches and perhaps can never be really solved.

To traders it is even less satisfactory, even if we allow that in their complaints that they cannot get what they want they will not always nor often be disinterested parties. The availability of supplies must be conditioned by government policy (in the case of food by such matters as nutrition, shipping space or the balance of payments), and individual allocations determined by some datum line in the fixing of which their current points trading may play little or no part. Yet the public will believe, or choose to think, that the system is one of flexible distribution guided by public demand and will tend to ascribe to the distributive trade rather than to the situation itself such disappointment as it suffers. Even if traders do not really want the flexibility that the system purports to achieve, they cannot say so openly and will try to divert from themselves and on to the original suppliers the complaints of final consumers. At the same time thay have to keep track of the volume of points flowing through, to check a points account as well as a cash account.

Yet, paradoxically enough, to the final consumer the system gives a good deal of satisfaction. The individual feels—or, at least at the start of the scheme did feel—that he has some choice in the composition of his diet and that, in some way free choice is being combined with equality of opportunity. But he fails to observe that in fact his range of choice is circumscribed by considerations outside the system, and that the system itself affects a very small range of his purchasing horizon. For even at the maximum load on the scheme the value of the points ration, averaged over the range of foodstuffs, never went much above 2*s*. 6*d*. per month. Perhaps the best comment is that made to the writer many years before the War by a French hotelier to whom he had remarked that the central heating did not work as designed " mais, après tout, monsieur, il-y-a une illusion."

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THE PRESENTATION OF NATIONAL INCOME STATISTICS

DURING the last two decades, national-income studies have had a rapid development and have reached the stage where international standardisation becomes desirable. With this end in view, the United Nations have published their *Studies and Reports on Statistical Methods No.* 7.[1] The report proposes first " a system of accounts that provides a framework within which true comparability can be developed as time goes on " and second " tables which we recommend should be adopted as a framework in the presentation of national income statistics." These tables comprise fifteen aggregates.[2] They are designed to present " certain accounts for the whole economic system or for major sectors of it which are of great utility in practical economic analysis."

The tables throw into relief various specific aspects of the economic system. But, surprisingly, no table presents the system as a whole. It may be that the suggested form of presentation is sufficient for the economist who is conversant with the procedure of social accounting of which the tables are an epitome. But it is certainly bewildering for the lay reader who tries to understand these statistics.[3] The interconnection between the various statements remains obscure, and the quantitative interdependence of the aggregates can be grasped only by means of a circumstantial analysis. It therefore seems desirable to devise a further statement which gives the missing bird's-eye view of the economy as a whole.

At the end of this note, a statement is suggested which tries to do this along the lines of commercial accounting practice. The statement is composed of a Profit and Loss Account, here called " National Revenue Account " and a Balance Sheet (which, however, does not show the assets and liabilities themselves, but only the changes which occurred during the year). It differs from a commercial accounts statement in one major point. The commercial statement shows the relation of an enterprise to the world around it. If national accounts were drawn up similarly, the statement would boil down to a Balance of Payments Account showing the relation of the national unit to the rest of the world. Most of the figures relevant in national-income statistics, however, concern the relation to each other of various sectors within the economy. Accordingly, the accounts are drawn up in tabular form, dividing the economy into a business and a non-business sector, the first being composed of "Inland"[1] and the "Rest of the World," and the second of a "private" and a "public sector." Broadly speaking, the first sector gives the real aspect, stressing the movement of goods and services, and the second gives the nominal aspect, stressing the movement of purchasing power. Or, if compared with commercial accounts, the account "Rest of the World" gives the usual statement which is then analysed into the other accounts in such a form that the debit and credit entries of each line balance (except for the few cases of "balances carried down" and of the balance sheet).[2]

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[1] Measurement of National Income and the Construction of Social Accounts. Report of the Sub-committee on National Income Statistics of the League of Nations Committee of Statistical Experts. Appendix : Definition and Measurement of the National Income and Related Totals, by Richard Stone. United Nations. Geneva. 1947. (Quotations from page 9.)

[2] The fifteen aggregates are : (1) personal income; (2) personal outlay; (3) relation between personal income and national income; (4) national income by factor shares; (5) national income by branches; (6) national expenditure at factor cost; (7) national income by income payments; (8) gross national product; (9) national expenditure at market prices; (10) saving; (11) capital formation plus net lending; (12/13) receipts and payments of enterprises on operating account; (14/15) receipts and payments of the public sector.

[3] W. M. Dacey, therefore, asked for a " popular version of the White Paper on National Income " see ECONOMIC JOURNAL, 1944, No. 214, p. 178.

Within the Revenue Account, items are grouped into A. Income; B. Sales proceeds; C. Adjustment items and D. Transfer items, leaving in each account E. Balances to be carried to the balance sheet, similar to the commercial usage.[3] The Balance Sheet, too, uses commercial headings, viz., G. Own funds, and Assets and Liabilities, divided into H. Real[4] and I. Nominal. This way of presentation raises a number of interesting theoretical questions which, however, need not be followed up here.

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[1] This is the consolidated Profit and Loss Account for the private business system requested by Gilbert and Jaszi in ECONOMIC JOURNAL, 1945, No. 220, pp. 446–7.

[2] The five accounts in the attached statement correspond to the five accounts in the "simplified social accounting system" of J. R. N. Stone in ECONOMIC JOURNAL, 1947, No. 227, pp. 293 sqq., and to the Tables 14 to 19 in the National Income White Paper of 1948, Cmd. 7649. The main differences in presentation are: (a) the juxtaposition of the accounts, (b) the captions and (c) the treatment of the capital account in the balance sheet.

[3] It is, of course, possible to condense the statement, *e.g.*, by relegating the transfer items No. 37 to 45 to sub-schedules. The statement here drawn up follows closely the example given in the Appendix to the UNO report.

[4] Group G equals Group H, being the equation savings = investment. It is here presented not in its simple form composed of two members, as applicable to a closed economy ($S = I$), but in its developed form, consisting of three members, cp. the UNO Report, p. 32, n. 1, and the concept of the "Balance of the national economy" of Gruenbaum in his "National Income and Outlay with Reference to Savings, Capital Movements and Investment" in the *South African Journal of Economics*, 1944, pp. 28 sqq., and in his *National Income and Outlay in Palestine 1936*, Table I.

NATIONAL REVENUE AND CHANGES IN THE BALANCE SHEET OF NN COUNTRY DURING THE YEAR ENDED THE .... 19...

No.		Business Sector.						Non-business Sector.			
		Inland—Current Account.		Inland—Accumulation Account.		Rest of the world.		Private Sector.		Public Sector.	
		Receipts.	Payments.	Receipts.	Payments.	Receipts.	Payments.	Receipts.	Payments.	Receipts.	Payments.
	NATIONAL REVENUE ACCOUNT										
1	(A) INCOME (by income payments) .—										
2	(*a*) Paid by the business sector to the non-business sector :										
3	Wages and salaries	—	4,330	—	205	—	5	4,540	—	—	—
4	Interest	—	360	—	—	—	140	475	—	25	—
5	Income as depositors and policy holders	—	320	—	—	—	—	320	—	—	—
6	Profits—distributed	—	1,640	—	—	—	40	1,670	—	10	—
7	Profits—undistributed	—	310	—	—	—	—	310	—	—	—
8	(*b*) Paid within the business sector :										
9	Interest	170	170	—	—	—	—	—	—	—	—
10	Income as depositors and policy holders	100	100	—	—	—	—	—	—	—	—
11	Profits—distributed	205	205	—	—	—	—	—	—	—	—
12	(*c*) Paid within the non-business sector :										
13	Wages and salaries	—	—	—	—	—	—	920	110	—	810
14	Interest (excluding National Debt)	—	—	—	—	—	—	25	—	—	25
15	*National income at factor cost (by income payments).*							*8,260*		*+35*	
16	(B) SALES PROCEEDS :—										
17	(*a*) Sold to other accounts:										
18	Consumer's goods and services	6,975	—	—	—	—	—	—	6,790	—	185
19	Export goods and services (including existing equipment)	500	—	—	−5	—	505	—	—	—	—
20	Capital goods and services	1,045	—	—	1,045	—	—	—	—	—	—
21	Gold	15	—	—	15	—	—	—	—	—	—
22	Less Government fees	−10	—	—	—	—	—	—	—	—	−10
23	(*b*) Sold within the account										
24	Raw materials	42,465	42,465	—	—	—	—	—	—	—	—
25	Insurance services (including claims)	125	125	—	—	10	10	—	—	—	—
26	Social security contributions	—	—	—	—	—	—	—	—	15	15
27	(C) CHANGES IN STOCKS, ETC. :—										
28	(*a*) Closing stocks :										
29	Increase in inventories	—	−15	—	15	—	—	—	—	—	—
30	Depreciation	—	490	535	—	—	—	—	—	—	45
31	(*b*) Imports	—	700	—	—	700	—	—	—	—	—
32	(*c*) Balance carried down	—	—	—	—	−10	—	—	—	—	—
33	*Gross National expenditure at market price (= gross national product) composed of:*					700	700				
34	*(a) Gross domestic capital formation*				*1,275*						
35	*(b) Net expenditure by the rest of the world on goods and services (Balance brought down)*						*−1*				
36	*(c) Domestic expenditure on goods and services*								*6,900*		*+1,070*

37	(D) **Transfer Items** :—										
38	Social security funds—balance	—	30	—	—	—	—	85	45	75	85
39	Bad debts	—	25	—	—	—	—	—	−25	—	—
40	Third party contingency claims	—	15	—	—	—	—	15	—	—	—
41	Taxation—direct	—	335	—	—	—	—	—	745	1,080	—
42	Taxation—indirect (less subsidies)	130	405	—	—	—	—	—	—	405	130
43	Interest on National Debt	175	—	—	—	—	—	170	—	—	345
44	Gifts and fines	—	—	—	—	20	45	115	95	5	—
45	Remittances from abroad	—	—	—	—	—	15	15	—	—	—
46	*Private income*							*8,660*	—	—	—
47	(E) **Balances transferred to Balance Sheet** :—										
48	(*a*) *Saving*										
49	Direct	—	195	—	—	—	—	—	545	—	−15
50	Via insurance and pension funds	—	—	—	—	—	—	—	45	—	—
51	Undistributed profits retained in business sector (reversal of No. 7)	—	−310	—	—	—	—	−310	—	—	—
52	(*b*) *Net domestic capital formation*—balance of Accumulation Account	—	—	740	—	—	—	—	—	—	—
53	(*c*) Borrowing and lending	—	—	—	—	30	—	—	—	—	—
54	*Personal income and personal outlay*							*8,350*	*8,350*		
55	(F) **Total Movement on Revenue Account**	51,895	51,895	1,275	1,275	50	50	8,350	8,350	1,615	1,615
	Balance Sheet (changes during the year)										
56	(G) **Own Funds** :—										
57	(*a*) Surplus :										
58	Balance of year (brought down from Revenue Account—No. 49, 50)	+120	—			—	—	+590	—	−15	—
59	Adjustment—increase in accruing liability of insurance companies (transferred between sectors)	+ 35	—			—	—	−35	—	—	—
60	(*b*) Reserves (brought down from Revenue Account—No 49)	+ 75	—			—	—	—	—	—	—
61	(H) **Real Assets and Liabilities** :—										
62	(*a*) Net domestic capital formation (brought down from Accumulation Account—No. 52—and distributed over the other accounts)	—	+540			—	—	—	+210	—	−10
63	(*b*) Net lending to rest of the world (capital export)	—	—			—	+30	—	—	—	—
64	(I) **Nominal Assets and Liabilities** .—										
65	(*a*) Net lending and borrowing	+310	—			−30	—	—	+345	+5	—
66	(K) **Total Changes in Balance Sheet**	+540	+540			+30	+30	+555	+555	−10	−10

A further advantage is that the statement may serve as the pivotal exhibit to which all subsidiary information is linked by means of schedules and sub-schedules. These may take four forms: (*a*) a column is analysed into its component parts (*e.g.*, "Inland business" is broken down into business enterprises plus house ownership plus banking plus other financial intermediaries plus insurance); (*b*) an account or a column is repeated in a varied presentation. *E.g.*, "Inland—current account" may be recapitulated in net, instead of in gross, figures. In this form the column lends itself easily to time comparisons; (*c*) a caption on the left hand is broken down into its component parts (*e.g.*, sales proceeds of consumers' goods and services, No. 18, into classes of goods, etc.); (*d*) an aggregate broken down in the statement in one form (*e.g.*, national income in No. 15 "by income payments") is repeated in other forms in schedules (*e.g.*, "by factor shares" and "by branches"). Whatever the wealth of detailed information included in a report, the reader can orientate himself easily by reference to the Revenue Account and the Balance Sheet.

It will be noted that out of the fifteen aggregates contained in the separate tables proposed by the UNO committee, seven are incorporated in the statement [1] and two others can be easily read off.[2] To that extent, a Revenue Account and Balance Sheet make the separate presentation of tables superfluous. Four of the remaining aggregates can easily be linked by way of schedules to some of the aggregates included in the Revenue Account.[3] Furthermore, by slightly redesigning the statements, additional aggregates of economic importance can be incorporated. This has not been done in the attached example in order to follow as closely as possible the numerical example given by way of illustration in the Appendix to the UNO report.

E. FUERST

Jerusalem.

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[1] Personal income No. 54; personal outlay No. 54; relation between personal income and national income No. 54 to No. 15; national income by income payments No. 15; gross national expenditure No. 33; saving No. 48; capital formation and net lending No. 61 to No. 63.

[2] Receipts of enterprises on operating account No. 18 to 42 less 22 in the first account left hand plus 29; receipts of the public sector No. 55 plus 65 less 26 in the last account, left hand.

[3] National income by factor shares; net national product; and net national expenditure as schedules to No. 15; gross national product as schedule to No. 33.

LABOUR IN THE ARMY IN TWO WARS

A COMPARISON with the upshot of a study of experience in the First World War adds force to the findings and suggestions contained in Professor Phelps Brown's interesting study, *Morale, Military and Industrial.*[1] Although Professor Phelps Brown considers the attitude and reactions of the fighting men themselves, he finds the common ground for comparison between work in the Army and work in civil life by taking "the soldier in denims rather than in battledress, and so keep(ing) to those parts of army life which are least affected by war-like excitement and the 'servitude et grandeur militaires'" (p. 42). The work is therefore strictly comparable with that of the British labour battalions of the First World War discussed by Lord Lindsay.[2] The purpose of the two papers is identical: in Lord Lindsay's words it was "to set down the results of an elaborate experiment in the organisation of labour, where the economic motives were largely absent, and their place had to be taken by others" (p. 69), while in the words of Professor Phelps Brown "the object of this study has been by examining some of the ways in which men worked when they did not have wage-incentives or the sanction of dismissal, to reveal the operation of factors whose effects, if any, it would otherwise be hard to disentangle" (p. 52).

Both writers agree that patriotism itself did little to bring forth hard work day by day, but was rather, in Professor Phelps Brown's happy phrase, "a general and permissive condition for work, rather than a motive" (p. 43; cf. Lindsay, p. 74). Both note the importance of professional skill, and with it professional pride in raising individual output (Phelps Brown, pp. 43–4; Lindsay, p. 77). As an alternative to a money reward output could be stimulated by some exemption from duties, as leisure was something everyone wanted (Phelps Brown, p. 44; Lindsay, p. 76).

It is remarkable that both writers stress two other factors above all others. In the first place, efficiency benefited greatly when each man was able to see what he was contributing and was not a mere cog in a large machine. "If they are treated as cogs in a machine, it does not much matter whether the machine is grinding out profits for individuals or benefits for the public. Being treated as a cog matters more than the purpose to which the machine is put. For treatment as a cog is obvious and ever present to the imagination, the purpose you are serving in the machine is difficult to keep continuously alive in the mind" (Lindsay, p. 75; cf. Phelps Brown, pp. 43–4). The answer was to be found in group morale. Lord Lindsay says the Labour Directorate ordered that men should be employed regularly in the same company or regular division of a company which was encouraged to keep records of work accomplished. Once the groups were formed and gained the loyalty of its small membership, such records were useful for stimulating competition with other teams with whom they were in contact (Phelps Brown, pp. 45–6).

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[1] ECONOMIC JOURNAL, Vol. LIX, No. 233, pp. 40–55.

[2] "The Organisation of Labour in the Army in France during the War and its Lessons," ECONOMIC JOURNAL, Vol. XXXIV, No. 133, pp. 69–82.

In the second place, "the fact that all were working for a public end did not in itself eliminate ill-feeling between employers and employed" (Lindsay, p. 75). The antagonism outlasted the profit motive, which had been eliminated. It was due, according to Lord Lindsay, to the continuance of treatment of the men as mere mechanical instruments. Once this was overcome the grievance disappeared. It was overcome by laying the responsibility for doing specific tasks and the methods of carrying the work out on the labour company itself. "How they did it, what intervals of rest they took, how they arranged their squads, was their affair. They were not living tools, but men assigned a responsible task and given scope to do it" (Lindsay, p. 76). Not only did the output of companies working on this contracting system improve enormously but also what had hitherto been monotonous routine provided scope for experiment and initiative. Likewise Professor Phelps Brown holds that "A great economy of effort could be achieved if the operational or administrative sub-unit could be made to coincide with the group. In effect, this meant giving the group a job and leaving them to get on with it. . . . Members of the group, having a problem in their own hands, might make a good suggestion which would not have been heard of otherwise, or offer to do something extra which they would have resented being ordered to do" (pp. 46–7).

The close parallelism between the content of the two papers may be seen also in the suggestions that each author makes. It will suffice to quote the following. "These facts seem to confirm the view that in a modern industrial society the fundamental antagonism is not between those who own capital and those who do not, important though that distinction may be, but is between those who take responsibility and manage and discipline, and those who are given no responsibility and are managed and disciplined, and that no solution of industrial problems is possible unless that antagonism is removed. How far the method which proved so successful in the army is applicable to industrial conditions is a difficult question. The work done by the labour corps involved little use of machinery, and therefore gave scope to individual and collective contrivance in a degree which would not be possible with machine production. The army experiments did, however, show that in work which under the old system had seemed to be merely mechanical routine, there was scope for contrivance and planning when men gave their minds to it" (Lindsay, p. 77). Professor Phelps Brown puts his point thus: "Some branches of manufacture may offer a choice between organising departments according to process or according to product: each process may be concentrated into one department, or the department may be set up to contain most of the processes which go to the making of a given assembly or product, even though this means that the same process will now be carried on separately in several departments. The experience reported here gives some reasons for expecting the latter to be the method which will suit human nature best; though the technical economies of concentrating processes may often be too great to allow of it. Under it, the end product is within sight of those engaged on particular processes, who thus have more chance to feel that they are really making something, instead of only going through certain motions. Those who are engaged in the various jobs can see how these fit—or sometimes fail to fit—into one another, and may develop a team spirit. The frustration of being held up by other people's shortcomings is avoided so far as the supplies of components or the links in a chain of processes are brought together by one team to maintain, making their own internal adjustments as necessary. The departmental leadership is given more executive freedom and less chance to put the blame on someone else" (p. 54).

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THE USE OF HOME RESOURCES TO SAVE IMPORTS

1. MR. BLAGBURN, in his Article published in this issue, has shown that in order to obtain £100 of import-saving production from British agriculture we had before devaluation on average to give up £123 of home resources (Table I). This raises the question of the conditions in which it is right to use home resources to save imports. Would it be better to devote the marginal home resources to the production of additional exports, and thus obtain the additional food from abroad?

2. At constant prices the £123 of home resources would probably produce exports worth perhaps £185 f.o.b., the difference being due to the higher net output per head in manufacturing industry and the profits excluded in Mr. Blagburn's valuation of resources. Further, in order to obtain comparability with Mr. Blagburn it is necessary to attempt to value the exports c.i.f. If the marginal cost of carrying extra exports can be treated as negligible, the £185 might be stepped up to £200.

3. Mr. Blagburn suggests (Section IV) that beyond a certain point the average value of home resources required per unit of imports saved increases slowly as total output, and therefore the intensity, of production increases. This situation might be depicted in tabular form by illustrative figures as follows :

TABLE I

The Productivity in Export Industries of Resources Devoted to United Kingdom Agriculture.

£ at constant prices.

	(i) Import replacement by U.K. agriculture.	(ii) Average home resources required per £100 imports saved.[1]	(iii) Total home resources required.[1] (= (i) × (ii)).	(iv) Export producing power of home resources used up in agriculture. $\left(= \text{(iii)} \times \frac{200}{123}\right)$.	(v) Increase in same (from (iv)).	(vi) Increases in import replacement by U.K. agriculture (from (i)).	(vii) Export producing power of increased resources used up per £ of increased import replacement (v ÷ vi).
1	100	123	123	200	—	—	—
2	120	125	150	245	45	20	2·2
3	130	131	170	275	75	30	2·5

[1] On Mr. Blagburn's definitions.

4. From this it appears that every £ of marginal resources put to agriculture could be made worth twice as much if put instead to export. This, of course, is fallacious. The extra exports must not only be produced, but also sold, and sold almost inevitably at worse terms than the smaller quantity. Resources devoted to export experience diminishing returns just as do those devoted to agriculture, even if, as will be assumed throughout

this note, the marginal physical productivity of the export industries is constant.

5. In what follows, we propose to deal with the effects of one factor only, the elasticity of demand for United Kingdom exports. It is implicitly assumed that the net effect of the other factors influencing the terms of trade, including the effects of varying levels of United Kingdom imports on the prices of imports and on the incomes of our foreign suppliers, is small relatively to the effect of the elasticity of demand for our exports, and can reasonably be neglected in an attempt to establish orders of magnitude. That is an assumption which will need examination. On the other hand, any formulation which attempted to take account of the whole set of relationships would be quite impracticable here. We shall assume that British exports are cheapened to the extent necessary in every instance, while import prices remain constant.

TABLE II

Effects of Alternative Elasticities of Demand for Exports on the Resources per £ of Increased Imports.

£ at constant prices.

	(i) Assumed volume of exports.	(ii) Assumed elasticity of demand.	(iii) Implied export prices (from (i) and (ii)).	(iv) Value of exports ((i) × (iii)).	(v) Import content ((i) × 15%).	(vi) Net imports (= net exports) ((iv) − (v)).	(vii) Net gain of imports = net gain of exports) (from (vi)).	(viii) Increased home resources (85% of increase in (i)).	(ix) Increase of imports per £100 of increased resources ((vii)÷(viii)).	(x) Value of home resources used per £ of increased imports. ((viii)÷(vii)).
1	100		100	100·0	15·0	85·0	—	—	—	—
2	120	1·5	86·7	104·0	18·0	86·0	1·0	17	5·9	17·0
3	120	2·0	90·0	108·0	18·0	90·0	5·0	17	29·4	3·4
4	120	2·5	92·0	110·4	18·0	92·4	7·4	17	43·5	2·3
5	120	3·0	93·3	112·0	18·0	94·0	9·0	17	52·9	1·9
6	120	4·0	95·0	114·0	18·0	96·0	11·0	17	64·7	1·5

6. In Table II it has been assumed that the volume of exports is increased by 20%. On various alternative assumptions of the

elasticity of demand for British exports, calculations are made of the net gain of imports. Allowance is made for the increased imports of materials necessary to make the exports on the reasonably realistic assumption that the import content is 15%. It will be seen that on the assumption that the elasticity of demand for exports is 1·5 the net increase of imports that could be secured by devoting an extra £100 to export is £5·9; this may alternatively be stated in the form that to secure an extra £ of imports, £17 of resources must be employed. If, on the other hand, the elasticity of demand for exports is as high as 4, the net increase of imports would be £64·7, or to secure an extra £ of imports, £1·5 of resources would have to be used.

TABLE III

The Balance Between Import Saving and Export on Various Assumptions

£ at constant prices.

	(i) Import value of home-produced food.	(ii) Value of home resources required to produce food	(iii) Output in export industries of resources employed to produce food ((ii) × $\frac{200}{123}$).	(iv) Assumed elasticity of demand for exports.	(v) Value of net imports secured by using resources in export industries ((iii) × Table II (ix)).
	(a) *Assumption* 1 *of Table I.*				
2	100	123	200	1·5	11·8
3	100	123	200	2·0	58·8
4	100	123	200	2·5	87·0
5	100	123	200	3·0	105·8
6	100	123	200	4·0	129·4
	(b) *Assumption* 3 *of Table I.*				
2	100	131	215	1·5	12·7
3	100	131	215	2·0	63·2
4	100	131	215	2·5	93·5
5	100	131	215	3·0	113·7
6	100	131	215	4·0	139·1
	(c) *Assuming Marginal Rate implied in Table I.*[1]				
2	100	160	260	1·5	15·3
3	100	160	260	2·0	76·4
4	100	160	260	2·5	113·1
5	100	160	260	3·0	137·5
6	100	160	260	4·0	168·2

7. In Table III the results of Tables I and II are brought together. If, following Mr. Blagburn, it requires £123 of home

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[1] The illustrative figures in Table I assume that an increase of £47 of resources would be required to secure approximately £30 of further import saving. This is equivalent to about £160 of resources per £100 of import saving.

resources to save £100 of imports, and if, after allowing for higher productivity in the export industries these resources could produce £200 of export goods at constant prices, the net addition to imports for any given elasticity of demand for exports can be calculated from column (ix) of Table II. If, for example, the elasticity is 2·5, the net gain of imports secured by the £200 of output in the export industries is £87. The transfer of resources from agriculture to export will add to net imports if, but only if, the elasticity of demand for exports is in excess of about 2·8.

8. The Table includes alternative calculations, the first of which corresponds with the least favourable figure given in Table I, column (ii), and the second of which corresponds approximately to the marginal rate of expenditure of home resources per £100 of imports saved implied by the figures given in Table I. It will be seen that if £131 of resources are used to save £100 of food imports, some diversion from home agriculture to export becomes worth while if the elasticity is a little above 2·6. On the alternative assumption that £160 of resources are used to save £100 of food imports, diversion remains worth while only if the elasticity is of the order of 2·3.

9. If it is legitimate as a first approximation, to neglect the other factors influencing the terms of trade, then it may be said that our present agricultural policies are appropriate if, but only if, the elasticity of demand for British exports is of the order of 2·5. This is a substantially higher elasticity than most statistical investigations into the pre-war data have suggested. Is there reason to think that this elasticity in fact now prevails?

10. These calculations have a further relevance to the substitution of other forms of consumption for the consumption of food. What is evident is that additional supplies of food are subject to diminishing returns whether they are secured by home production or by import, if additional imports can be secured only by further worsening of the terms of trade. But if the British consumer would prefer an additional £200 (or possibly even an additional £260) of home-produced non-food consumption to an additional £100 of consumption of food, that substitution of a larger volume of non-food consumption can be provided with no increase in the use of resources. What is the marginal rate of substitution between food and home-produced goods or services in general?

AUSTIN ROBINSON
ROBIN MARRIS

CURRENT TOPICS

DR. JOHN NEVILLE KEYNES, Fellow of Pembroke College, Cambridge, formerly Registrary of Cambridge University, father of John Maynard Keynes, died in Cambridge on November 15, 1949, aged ninety-seven. While his main work was in the field of logic, he was well known as a teacher and writer of economics, and his book *The Scope and Method of Political Economy* was widely read. We shall hope to publish a fuller notice in a later issue.

THE Royal Economic Society must offer double congratulations to Professor A. L. Bowley, first, on reaching his eightieth birthday, second on the conferment of the honour of Knight Bachelor and in the New Years Honours List.

WE congratulate also Mr. A. K. Cairncross, lately Economic Adviser to the Board of Trade and recently appointed to a Chair at Glasgow University, on the award of a C.M.G.

MR. H. J. HABAKKUK, Fellow of Pembroke College, Cambridge, has been appointed to the Chair of Economic History in Oxford University.

Houblon-Norman Fund. The Trustees of the Houblon-Norman Fund invite applications for Fellowships or Grants in aid of research into the working of financial and business institutions in Great Britain and elsewhere and the economic conditions affecting them. Apart from exceptional cases, awards will be confined to British-born subjects normally resident in the United Kingdom and will take effect from October 1, 1950. Fellowships will be awarded for one year, renewable for a second year: and the amount of all awards will depend upon the circumstances of the candidate and the likely expenses of his work. Applications should be made not later than March 31, and forms of application may be obtained from the Secretary of the Fund (H. C. B. Mynors), c/o the Bank of England, London, E.C.2.

THE Association of Scientific Workers has recently formed a new branch for Social Scientists. Any who are interested should get in touch with the Secretary of the London Social Scientists Branch, Association of Scientific Workers, 28 Queen's Avenue, London, N.10.

RECENT PERIODICALS AND NEW BOOKS

Journal of the Royal Statistical Society.

VOL. CXII, PART I, 1949. *Some Statistical Aspects of Road Safety Research:* R. J. SMEED. *Earnings and Working Hours of Manual Wage-Earners in the United Kingdom in October, 1938:* R. B. AINSWORTH. *Statistics of the Censuses of Production and Distribution:* H. LEAK.

VOL. CXII, PART II, 1949. *International Statistics:* H. CAMPION. *Local Government Statistics—with Special Reference to the Health Service:* B. BENJAMIN. *Tables of Sequential Inspection Schemes to Control Fraction Defective:* F. J. ANSCOMBE. *The Overseas Trade Statistics of the United Kingdom:* A. MAIZELS.

The Economic History Review.

SECOND SERIES, VOL. II, NO. 1, 1949. *The Concept of Economic Imperialism:* R. KOEBNER. *Elizabethan Overseas Trade:* L. STONE. *An Industrial Revolution in the Cotton South:* S. MELMAN. *Some Lincolnshire Enclosure Documents:* W. H. HOOFORD. *The Bank of England as Mentor:* J. K. HORSEFIELD.

The Political Quarterly.

OCTOBER—DECEMBER 1949. *A Review of Socialist Financial Policy, 1945–1947:* D. BRUCE. *Conservative Policy:* R. A. BUTLER. *How Isolationist is Stalin?:* A. WERTH. *The Control of Foreign Policy in the United States:* W. Y. ELLIOTT. *The Vatican and Italian Democracy:* NINETTA S. JUCKER. *Political Rights of Civil Servants:* W. H. MORRIS JONES.

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VOL. XL, SECTION 9, 1948. *Problems of Country Town Industries:* K. S. WOODS.

VOL. XL, SECTION 10, 1948. *Racialism as a Social Factor:* F. HERTZ.

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VOL. 41, NO. 3, OCTOBER 1949. *Maurice Newfield. The Royal Commission on Population: the demographic position:* SIR CHARLES ARDEN-CLOSE. *The Royal Commission on Population and the Society's Aims:* C. P. BLACKER. *The Royal Commission on Population and P.E.P.:* R. RUMBOLD. *The Royal Commission's Report and the Press:* C. P. BLACKER. *Some Biological Considerations in Social Evolution:* H. J. FLEURE.

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VOL. I, NO. 2, OCTOBER 1949. *From Munich to Moscow, II:* E. H. CARR. *The Biology Discussion: a commentary* (R.S.). *Some Recent Developments in Soviet Economic Thought* (J.M.). The Journal of the Moscow Patriarchy; *an analytical survey of contents, 1943-49, II* (R.S.).

Bulletin of the Oxford University Institute of Statistics.

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VOL. XXVII, BULLETIN IV, NOVEMBER 1949. *The Economics of 1950:* C. F. CARTER and R. C. TRESS. *Prices and Devaluation:* R. G. D. ALLEN. *Wage Rates and Earnings:* A. L. BOWLEY. *Index of Industrial Production:* A. A. ADAMS. *International Finance:* G. S. DORRANCE. *Home Finance:* F. W. PAISH. *World Commodity Survey:* C. F. CARTER. *Building and Civil Engineering:* I. BOWEN. *Canada:* D. C. MACGREGOR.

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OCTOBER 1949. *The Sterling Problem :* L. ROBBINS. *Benelux :* THE EDITOR.

Midland Bank Review.

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De Economist.

JULY–AUGUST 1949. *Coördinatie tussen spoor, auto en schip in het binnenlands goederenvervoer :* J. DE VRIES. A detailed discussion of the relationships between railway, road and ship in the inland goods-transport industry. There is need for systematic thought on problems of co-ordination. Between the different branches of transport the typical difference is not in function but in technique. They may replace each other, and therefore are in competition. If the free forces of the organisations concerned are not in a position to assure an acceptable "order," it becomes the duty of Authority to secure this end. But intervention of Authority must not impair the dynamic character of society. Hence it is a primary principle that the sender must have the choice of the means of transport to be used. This is limited by the principle that the total transport capacity must be applied to the total need of transport. This implies continuity in the distribution of total transport over the three branches of transport, which again rests on stabilisation of the price-relationship between the forms of transport. There follows a detailed consideration of specific problems connected with co-ordination. *Het problcem van het wetenschappelijk waarde-oordeel in de economie :* H. TEN DOESCHATE. In the number of *De Economist* for September 1948, Dr. Hartog criticised a doctoral dissertation by F. L. Polak on "value-judgments." The present article is a comment on, and a criticism of, the views expressed by Hartog.

SEPTEMBER 1949. *De geografische aspecten van de industrialisatie in verband met de bevolkingsontwikkeling in Nederland en West-Europa :* J. WINSEMIUS. Industrialisation is necessary for the Netherlands, (*a*) to rectify balance of payments; (*b*) to meet increasing population. The writer is concerned with the second of these. There are four ways of providing for increasing population, viz.: (i) annexation of territory; (ii) land reclamation, (iii) emigration; (iv) industrialisation. The first two of these are ruled out as impracticable solutions. Estimates for the population of the Netherlands are in the region of 12 million in 1970, with a possible later increase to about 15 million. Up to the Second World War there was no large-scale net-emigration, but this possibility must not be ignored in considering the future. Holland is an exception in Western Europe in that it has a net reproductive rate well over unity. A large excess of births in the Netherlands, as against a cessation of increase of population in Belgium and a markedly diminishing population in Germany, is to be expected. After 1970-80 a strong attraction on Dutch labour will be exercised by Belgian and German industry. As from 1950 an economic unity will exist between Belgium and Holland within the framework of Benelux, and labour will be attracted more easily to the most suitable places. With the establishment of greater unity, the possibilities of expansion will accrue to the advantage of Belgium rather than of the Netherlands. In these circumstances the extent of emigration will be determined by the suitability of the Netherlands for industrial production compared to other countries. The Netherlands are poor in coal (apart from South Limburg): Belgium is better placed. The problem is urgent; it is necessary in the next two decades to provide for two million new inhabitants. The policy of seeking a solution by industrialisation is accordingly doubtful. The tendency to emigration, hitherto restrained by economic frontiers, will develop more freely in the increasing unity of Western Europe. The writer discusses the consequences of emigration on a large scale. There is a loss on the emigration of young people, in respect of capital invested in them on which no return is obtained; the age distribution is detrimentally affected; there are eugenic losses. The failure of industrialisation would lead to: (i) structural unemployment on a large scale; (ii) pressure on the standard of living; (iii) an excess of emigration on a large scale. The prospects of industrialisation and the question of location of industry in various parts of the Netherlands are considered. The conclusion is that up to 1970–80, there will be moderate possibilities of emigration, accompanied by structural unemployment and pressure on the standard of living. From 1980 to 2000, the pressure to emigrate will be stronger. As from about 2000, the situation will be complicated by the exhaustion of the coal-mines of South Limburg.

OCTOBER 1949. *Financieel-economische perspectieven van Nederland :* M. W. HOLTROP. Figures are quoted showing the astonishing recovery of Holland in the last four years in Industry, Agriculture, Foreign Trade and in other respects. In the light of these many favourable indices, what is wrong? The answer is that we, the people of Holland, are not able to pay the bill. The problem of the Balance of Payments is considered, and it is emphasised that equilibrium must be attained by the middle of 1952. There are only three ways of attaining equilibrium : (*a*) increased production, without simultaneous increased consumption or investment; (*b*) diminished investment; (*c*) diminished consumption. These are considered, and the difficulties connected with (*a*) and (*b*) are indicated. Increased production must not lead merely to increased consumption : for this reason it is doubtful whether a " welfare-policy " need lead to an alleviation of the balance-of-payments problem. In the matter of restriction of investment, it is necessary to distinguish short-term and long-term ends. This consideration is specially important for Holland by reason of the rapidly increasing population which, for its employment, demands maintenance of investment. The conclusion is that the effective remedy lies in a diminution of consumption. There are difficulties now (in Holland) in either a system of rationing or of restriction of imports. The writer therefore favours a dimunition of real income operated by higher prices. There may be difficulties in securing acknowledgment of the fact that Holland cannot allow herself the real level of wages already attained, but a " level of well-being is a result of economic exertion, and must not be put forward as a postulate." Devaluation is a condition of restoration; it is not necessarily the sufficient means to restoration. Its power to increase production is limited, because of the high level of employment prevailing. Diminution of consumption is a natural consequence of devaluation, but it will be futile to try to meet the resulting situation by increases of wages. What of the future? It is " what we make it "; but " if we refuse to accept reality and endeavour to maintain a standard of life not in accordance with our economic performance, then we are certainly advancing to disaster." *Enkele dynamische aspecten van het vraagstuk van de betrekkingen tussen sparen en investeren :* F. De Roos. The writer is concerned with the question of industrialisation, by which is meant the maintenance of investment at a higher level to provide for future opportunities of work for a rapidly increasing population, while maintaining a reasonable level of consumption. Fears are sometimes expressed that savings will not be sufficient to provide the desired industrialisation. The article is in large measure a review of theories concerned with the relation between savings and investment, with special attention given to Keynes and the Swedish School. The conclusion on the topical question is that in general the fear that investment may be hampered by an inadequate supply of risk-bearing capital is unjustified.

Aussenwirtschaft.

Vol. 4, No. 3, September 1949. *Währungspolitischer Erdrutsch :* A. Bosshardt. *Die internationale Bedeutung der schweizerischen Privatversicherung :* C. Gasser. *Autonome Geldpolitik und bewegliche Wechselkurse :* E. Heuss. *Diskriminierung gegen die Schweiz ?:* H. Bachmann.

Schweizerische Zeitschrift für Volkswirtschaft und Statistik.

Vol. 85, No. 6, December 1949. *Albert Gallatin und die amerikanische Finanzpolitik zu Beginn des 19, Jahrhunderts :* K. Sulzer. *Zur Frage einer schweizerischen Produktionsstatistik :* F. Küng. *Die moderne Einkommenssteuer und das Quellenabzugsverfahren :* F. A. Bodmer. *Zur Frage der Parität im künftigen Münzgesetz :* R. Frei.

Wirtschaftsdienst.

July 1949. *Die Wandlung der amerikanischen Wirtschaftspolitik gegenüber Deutschland :* F. Baade. *Nationale Buchführung und Nationalbudget :* E. Schneider. *Wirtschaftliches Verhalten und Wirtschaftsentwicklung :* S. Wendt. *Die Entwicklung des Reallohnniveaus :* U. Küntzel.

August 1949. *Marktspaltung als Sozial- und Subventionsinstrument in der Agrarpolitik :* W. Kromphardt. *Das Paritätspreissystem der USA für Agrarerzeugnisse :* R. Plate. *Die Subsidierung von Ernährung und Landwirtschaft in Grossbritannien :* E. S. Schlange. *Die wirtschaftliche Lage der deutschen Reichsbahn :* R. Busch.

SEPTEMBER 1949. *Quantitative und qualitative Marktforschung :* E. SCHÄFER. *Marktbeobachtung und Absatzlenkung :* J. E. SCHWENZNER. *Kritik der Händler- und Verbraucherbefragung :* J. H. SCHMIDT. *Voraussage durch Massenbefragung :* H. J. SCHNEIDER. *Um eine deutsch-französische Zusammenarbeit :* H. RIBOT.

OCTOBER 1949. *Die drei Stufen des Sozialismus :* L. VON WIESE. *Idee und Gestalt des Sozialismus :* H. RITSCHL. *Die Scheidung der sozialistischen und kommunistischen Ideologie :* O. WEINBERGER. *Landflucht als internationale Erscheinung :* P. QUANTE.

NOVEMBER 1949. *Der Gedanke weltwirtschaftlicher Solidarität im Dienste überstaatlichen Zusammenschlusses :* R. FLECK. *Export nach den USA :* C. KAPFERER. *Prinzipien und Praktiken in der Handelspolitik der Sowjetunion :* N. MÜLLER. *Analyse der westdeutschen Einfuhr :* D. KELLER. *Die Schweiz in der wirtschaftlichen Zusammenarbeit Europas :* O. STEIN. *Albanien zwischen den Mächten :* H. GROSS. *Eröffnungsbilanz der beiden Indien :* U. KÜNTZEL. *Die öffentlichen Wirtschaftsorgane in Chile :* B. H. VON WEVELL.

Europa Archiv.

VOL. IV, NO. 17. *Der Strassburger Europarat in der Perspecktive der Vorschläge Briands. Hitlers Krieg gegen England. Die Bevölkerungsbewegung in Deutschland in den Jahren 1946–1948, Part I. Der Europaplan Briands vom 1 Mai 1930. Das europäische Handelsnetz nach Ländern.*

VOL. IV, NO. 18. *Schaffung einer europaischen übernationalen politischen Autorität. Die Problematik der Geschichtsschreibung in der Gegenwart. Die Gründung des jüdischen Staates Israel, Part I. Das britische Sozialisierungsprogramm. Die Bevolkerungsbewegung in Deutschland in den Jahren 1946–1948.*

VOL. IV, NO. 19. *Auftakt zu einem neuen Revisionismus ? Wissenschaft und Politik. Die deutsche Westgrenze nach dem zweiten Weltkrieg. Die Entwicklung des Steueraufkommens in den vier Besatzungszonen Deutschlands seit 1947/48. Deutsche Katholikentag in Bochum.*

VOL. IV, NO. 20. *Die allgemeine Erklärung der Menschenrechte. Grundzüge des neuen Besatzungsregimes in Westdeutschland. Die Gründung des jüdischen Staates Israel. Die deutsch-französischen Wirtschaftsbeziehungen und die Möglichkeiten ihrer zukunftigen Gesaltung. Die erste Sitzungsperiode des Europarates in Strassburg.*

VOL. IV, NO. 21. *Die politischen Ergebnisse der ersten Sitzungsperiode des Europarates in Strassburg. Die Quellen zur Erforschung der Geschichte des „Dritten Reiches." Empfehlungen der Konsultativversammlung des Europarates in Strassburg an den Ministerausschuss. Die wirtschaftliche Erschliessung Afrikas.*

VOL. IV, NO. 22. *Pariser Zwischenstadium. Die Staatwerdung des neuen Polen 1939–1949. Der Lebensstandard der Industriearbeiter in Grossbritannien und Westdeutschland. Die Verstaatlichungspolitik der britischen Arbeiterregierung. Dokumente zur Bildung der Deutschen Demokratischen Republik (Sowjetische Besatzungszone).*

Economia Internazionale.

VOL. II, NO. 3, AUGUST 1949. *The Nature of Import Propensities and the Foreign Trade Multiplier :* H. NEISSER. *Essai d'une théorie socialiste des échanges internationaux :* R. MOSSÉ. *Productivité, salaires réels et Union Économique :* M. ALLAIS.

Banco di Roma. Review of the Economic Conditions in Italy.

SEPTEMBER 1949. *The Cross-Rates of Exchange Once More :* C. BRESCIANI TURRONI.

NOVEMBER 1949. *Outline of a Mathematical Theory Concerning the Public Service Tariff :* L. AMOROSO.

Italian Economic Survey (The Association of Italian Joint Stock Companies).

JULY–AUGUST 1949. *The "Liberalisation" of Foreign Trade.*
SEPTEMBER–OCTOBER 1949. *The Consequences of Devaluation.*

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NO. 3, 1949. *Le problème d'une monnaie européenne :* B. NOGARO. *L'influenza del Keynes sulla letteratura economica contemporanea :* V. MARRAMA. *Del luogo dei Principi del Marshall nello sviluppo delle teoria economica :* G. F. SHOVE. *Preliminari alla teoria della piena occupazione (2ª parte) :* L. FEDERICI.

Metroeconomica.

VOL. I, NO. 1, JULY 1949. *Recherches inductives sur la prévision des prix :* C. BRESCIANI-TURRONI. *Limites de l'industrialisation :* G. U. PAPI. *The equalisation of factor prices between free-trade areas :* J. TINBERGEN. *Static macroeconomic models and their econometric verifications :* G. TINTNER. *A Note about capital values :* F. ZEUTHEN.

Ekonomisk Tidskrift.

VOL. LI, NO. 2, JUNE 1949. *Customs Union as an Economic Problem :* INGVAR SVENNILSON. An analysis of what the establishment of a customs union between a group of countries implies. Special reference is made to the attempts at integration made by the Scandinavian states. The author emphasises that if, for example, the Northern countries were to have a common localisation policy, they would have to accept free inter-Scandinavian migration of labour and capital and the abolition of quantitative restrictions on commodity trade. The author is sceptical, and concludes that it is improbable that a successful customs union can be established unless the political requisites for an economic union already exist. *A Further Note on the Inflationary Gap :* RALPH TURVEY. This is a second article (in English) in which Mr. Turvey comes to the conclusion that what he said about the inflationary gap in *Ekonomisk Tidskrift* (March 1948) related to a special case. The argument assumes a one-commodity economy with no Government and no international trade; and the method is based on Lindahl (*Studies in the Theory of Money and Capital,* pp. 60 and 65). The Gap is defined as the difference between Demand at the price which is consistent with the plans and expectations of sellers and Output valued at this price. The author claims that this is better than defining the Gap as *ex post* Demand minus Value of Output. The latter gives the same result only in the case where the Total Demand curve is a rectangular hyperbola. The main purpose of the article is to find out how to calculate the Gap for several "periods" (in the Stockholm School sense). It is not legitimate to summate the gaps in the individual periods to arrive at the "total gap"—except in the special case dealt with in the previous article. In all other cases the Inflationary Gap must be calculated as an annual rate at a point of time not as an amount for a year. Unless it is assumed that *ex ante* Income = *ex ante* Supply, the gap must not be regarded as the difference between Investment and Savings. *Swedish Labour Market Statistics :* H. HYRENIUS. The article discusses various possible improvements in labour market statistics in Sweden, *e.g.*, by applying the sampling technique, to throw light on the volume and distribution of employment, the changing character of unemployment, occupational and place mobility, the mechanism of the labour market, and cyclical fluctuations.

VOL. LI, NO. 3, SEPTEMBER 1949. *Problems in the Study of Multilateralism :* INGEMAR GERHARD. Mr. Gerhard is the author of a detailed study of Swedish Foreign Trade 1936–38, published in 1948. The analytical content of the book was sharply criticised by Dr. Fernholm in a review in *Ekonomisk Tidskrift,* March 1949. One criticism was that Mr. Gerhard's inquiry into multilateralism should have embraced the entire range of international payments. In reply the author here seeks to justify his position by referring to the inadequacy of the statistical data and by asserting that much can be learnt by confining the analysis to trade balances. The present article deals with some of the methodological problems involved, without facing up to the searching objections raised by Dr. Fernholm. *The National Income, the Rate of Exchange and the Trade Balance :* KARL-OLOF FAXEN and KURT SAVOSNICK. This article analyses the elasticity conditions under which devaluation may be expected to lead to an improvement in a country's trade balance. In the first approximation the country's supply curve for exports and demand curve for imports are assumed to be independent of changes in the trade balance. The second case takes into account the fact that the supply and demand curves will shift as a result of changes in the national income due to movements of imports and exports. The changes in imports and exports are of two kinds. "Autonomous" changes are the direct result of devaluation, and "induced" changes occur through shifts in the national income. The mathematical analysis proceeds on the assumption that the domestic price level in the devaluing country remains constant; and the authors emphasise that their results give wider possibilities of reducing an import surplus than would be the case if the domestic price level rose with depreciation of the currency. In the third section of the article the authors recognise the existence of oligopolistic market structures, and with the aid of kinked demand curves give a suggestive examination of some of the implications for the problem in hand. Finally, they make an ingenious use of the same technique in comparing the case where only one country devalues with the case where other countries are expected to follow suit.

Skandinaviska Banken Aktiebolag.

VOL. XXX, NO. 4, OCTOBER 1949. *Centres of Monetary Stability :* P JACOBSSON. *Keynes and Post-War Economic Policy :* E. PETERSEN. *Capital Investment of the Swedish Insurance Companies :* G. ERICSSON. *Company Balance Sheets for 1948. The Economic Situation during the Third Quarter of 1949.*

Index.

SEPTEMBER 1949. *The Economic Situation. The Devaluation of the Swedish Krona. The Swedish Textile Industries. Statistics.*

Nationaløkonomisk Tidsskrift.

NOS. 3–4, 1949. *On the Changes in Exchange Rates :* JØRGEN GELTING. *Danish Shipping :* CHRISTIAN HARHOFF. *Iceland's Economic Conditions During and after the War :* O. BJØRNSSON. *On the Aims of Social Policy :* NIELS BANKE. *The Freeing of Inter-European Trade :* E. BARTELS. *Public Opinion Surveys and their Use in Illuminating the Savings Problem in the U.S.A. :* HELGE ANDERSEN. *The Influence of Taxes on Property Prices :* K. J. KRISTENSEN. *The Real Value of the Social Building Societies' Building Funds :* RACHEL BAGER.

Økonomi og Politik.

VOL. XXIII, NO. 3, JULY–SEPTEMBER 1949. *Den nordatlantiske pagt :* S. HENNINGSEN. *Forfatningsudviklingen i Tyskland :* A. RASCH. *Engelsk og amerikansk presse :* J. LAURSEN.

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VOL. 2, NO. 3, 1949. *Produktionsfaktorerna och deras priser :* O. STADIUS. *Nationalekonomiska och finanspolitiska synpunkter på den förflyttade befolkningens ersättningsproblem :* V. PROCOPÉ.

VOL. 2, NO. 4. *Finlands vattenkraftresurser :* H. FRILUND. *Lantbrukets driftsekonomi—dess mål och möjligheter i forskningens tjänst :* N. WESTERMARCK. *Tullförhandlingarna i Annecy och deras konsekvenser for vårt land :* C.-E. OLIN.

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March 1949. *El efecto monetario :* J. Sarda. *La Banca española en 1948 :* L. C. Garrigos. *La regulación de la inflación :* E. de Figueroa.

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April–June 1949. *Investigación y experimentación de la caña de azúcar en México :* A. G. Gallardo. *El progreso económico de Venezuela :* M. P. Guerrero. *Balance de resultados del patrón cambio oro :* A. L. Iñárritu. *Política de los cárteles internacionales :* E. Hexner.

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June 1949. *Subsídios para o estudo dos termos fundamentais da Economia Portuguesa :* J. Alarcao.

September 1949. *Significado histórico da obra de Mouzinho da Silveira :* A. Castro. *As recentes variações cambiais e a nossa balança de pagamentos :* L. S. de Abreu and A. Costa Leal.

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Vol. 3, No. 2, June 1949. *Representação analítica das distribuições dos contribuintes e das respectivas rendas líquidas determinadas para a aplicação do impôsto de renda, em função do valor da renda líquida :* G. Mortara. *Conversão do Moeda e Inflação Reprimida :* J. H. Furth. *Lei Monetária.*

Obzor Národohospodářský (Czech text).

No. 7, March 1949. *Our Budget for 1949 :* B. Spáčil. *The new organisation of Economic Planning in Czechoslovakia :* J. Berák. *Regional Considerations in International and Domestic Trade :* P. Zeman. *Agricultural Planning :* K. Lamberk. *On some Conditions for an Expansion of International Trade :* T. Pistorius. *The Post-war Hungarian Economy :* M. Zelenka.

No. 8, April 1949. *A Balance Sheet of the Labour Force :* B. Glos. *The Measurement of the Standard of Living in England :* V. Velimský.

No. 9, May 1949. *Planning is also an Art :* J. Nebesář. *Economic Aspects of Industrial Investments :* F. Bernat. *The Polish National Bank :* M. Orlowski. *The Measurement of the Standard of Living in England (concl.) :* V. Velimský.

No. 10, June 1949. *Contributions to the Theory of Foreign Exchange Shortage :* M. Horna. *The Theoretical Foundations and Functions of Financial Planning :* M. Ubiria. *The Problem of Price in a Planned Economy :* J. L. Porket. *European Land Reforms in the Inter-War Period :* A. M. Mayer.

Statisztikai Szemle (Hungarian text).

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No. 7, 1949. *The Determination of Economic Needs :* J. Joffe. *The Size and Composition of the Social Product in Socialist Society :* Szobol. *The Distribution of Social Property under Socialism :* Ljápin.

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SEPTEMBER 1949, VOL. IV, NO. 17. *The Wages Plan in Soviet Industry*: F. ZALA. *Planning and the Employment of Resources*: G. RÉCZEY. *The Function of Standardised Bookkeeping in the Improvement of Accounting*: J. KIRÁLY. *The Acceleration of the Turnover Cycle of Working Capital*: G. SZALTIKOV. *The Rôle of the Assessment of Labour Norms* (*continued*): J. DUZS.

SEPTEMBER 1949, VOL. IV, NO. 18. *Some Problems in the Theory of Production Control*: K. FARKAS. *Remarks on Accountancy Courses in Hungarian Universities*: G. KELEMEN. *The Acceleration of Money Turnover*: L. RADNAI. *A Reconsideration of the Existence of the Annual Single Account from the Point of View of Convenience*: I. NEMÉNY, G. LAKATAS and G. HAJÓS. *The Convenience of Price Statements in the Accounts of Enterprises*: J. SCHOPP.

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NO. 2, APRIL–JUNE 1949. *The Superiority of Socialist Production in Agriculture*: V. MALINSCHI. *The Problem of Assessing and Amortising Capital*: C. ATANASIU. *Industrial Standardisation*: S. BĂLAN. *Economic Organs of the People's Councils*: M. MAIEVSCHI. *Problems Connected with the Rôle of Roumanian Co-operatives*: R. BORȚOI. *Financial Planning for Industrial Enterprises*: C. NICULCEANU. *Theoretical Study in Statistics*: V. TREBICI. *Problems of Socialist Industrialisation in the Works of Stalin*: F. KOȘELEV. *The Marshall Plan and Great Britain or the Coloniser Colonised*: E. BALAS.

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No. 8, 1949. *The Expansion of Compulsory Participation in the Exchange of Goods without Money :* S. Szałowski. *National Income and Expenditure :* P. Solmicki. *Principles of the Financial System of State-owned Enterprises for 1950 :* B. Blass. *Accounting as an Instrument of Control by Banks of State-owned Enterprises :* Z. Zdyb.

No. 9, 1949. *Problems of Assessing Norms of Circulating Capital :* T. Choliński. *The Structure of Monetary Circulation and its Significance :* M. Kucharski. *Reorganisation of the Ministry of Finance :* Z. Pirożyński. *The Essence and Structure of the Plan for Financial Returns from abroad :* A. Siebeneichen.

Pari I Kredit (*Monnaie et Credit*) (*Bulgarian text, French and Russian summaries*).

No. 1, 1949. *The Struggle for Peace and Democracy :* I. Paliiski. *The Bulgaro-Soviet Trade Agreement in 1949 :* A. Kasabov. *The Practical Application of Credit :* P. Panteleev. *Public Finance under Capitalism and under Socialism :* G. Gotsev. *Working Capital in Socialist Industry and the Functions of the National Bank :* A. Ganeva. *The New Bulgarian System of Planned Accounting :* B. Nadzhakov. *Review of the Bulgarian Economy in 1948. The Czech Economic Plan. The Trade Union Conference on Credit.*

No. 2, 1949. *A Striking Electoral Victory :* I. Paliiski. *The Fourth Soviet State Loan :* A. Kasabov. *Planning Amortization Reserves :* K. Kamenov. *National Income and Capital Investment :* K. Poppov. *Results of the Plan in the First Quarter 1949. The Polish Economic Plan for 1949.*

Planovoe Khoziaistvo (*Russian text*).

No. 4, 1949. *Economy of Materials—the Source of Production above Plan :* I. Nosenko. *On the Planned Consumption of Productive Energy :* P. Ivanov. *Rural Electrification in the U.S.S.R. :* N. Naumov. *Problems of Municipal Construction and Economy :* A. Sharov. *Some Questions of the Balance of Money Income and Expenditure of the Population :* N. Margolin. *The Construction of a Socialist Economy in the People's Democracies :* L. Petrov.

Izvestia Akademii Nauk S.S.S.R. (*Bulletin of the Academy of Sciences of the U.S.S.R.*), *Economics and Law Section* (*Moscow*).

No. 2, 1949. *Lenin and Stalin on the Rôle of the State and of Law in the Building of Communism :* Academician I. P. Trainin. *Marx and Engels on Russia :* A. L. Reuel. *Reports of Section Meetings and of the Discussion of Degree-dissertations.*

No. 3, 1949. *Quickening the Turnover of Working Capital :* A. D. Gusakov. *Reports of Discussions in the Institute of Economics of the Academy and of the Discussion of Degree-dissertations.*

No. 4, 1949. *The Political Outlook of A. N. Radishchev* : S. A. Pokrovsky. *N. G. Chernishevsky on the Subject-matter and Method of Political Economy* : V. H. Zamiatin. *Discussion of a Report of M. V. Kolganov, "Towards a Theory of Property."*

Voprosy Ekonomiki (*Russian text*).

No. 4, 1949. *The Struggle for Quickened Turnover of Resources : a New and Higher Stage in Mastering Production* : V. Diachenko. *State Labour Reserves—A New Source for Supplementing the Working Class in U.S.S.R.* : E. Mochova. *Against Bourgeois Objectivism and Formalism in the Science of Statistics* : T. Kozlov. *Italy in the Grip of the Marshall Plan* : P. Lisovsky. *The Expansion of U.S.A. Oil Monopolies in South America* : V. Volsky.

No. 5, 1949. *The Rôle of Electrification in Realising the Stalin Plan for Transforming Nature* : S. Matskevitch. *On Some Questions in the Methodology of Economic Indices* : I. Malyi. *Towards a History of the Kizel Coal Basin* : A. Zvorikin. *Labourism—the Ideological Prop of Imperialism* : I. Dvorkin. *The Impoverishment of Working Farmers in U.S.A.* : A. Liebkind.

No. 6, 1949. *The Boosting of Socialist Livestock-breeding : the central task in the development of agriculture in the U.S.S.R. A Contribution to the Study of K. Marx on the Reform of 1861 and Russian Economics up to the Reform* : R. Koniushaia. *Expansion of American Imperialism in the Near and Middle East* : G. Akopian. *The Struggle over Nationalisation in France* : V. Liubimova. *Efficiency of Capital Investments and the Theory of Reproduction* : D. Chernomordik. *Some Questions of the Efficiency of Capital Investment in Soviet Economy* : P. Mstislavsky.

No. 7, 1949. *To Develop Universally Economic Accountancy within Enterprises* : A. Vorobyova. *The Struggle for Accelerating the Turnover of Stocks and the Development of Economic Accountancy* (*the experience of the Lengingrad factory, Electrosila, called after S. M. Kirov*) : A. Rosenberg. *Bourgeois Cosmopolitanism in the Service of American Imperialism* : M. Rubinstein. *Economic Contradictions and Struggle between American and English Imperialists* : I. Lemin. *A Contribution to the History of Agriculture in Russia* : A. Korneiev. *Experience in Organising Intra-Factory Economic Accountancy in Moscow Factories* : A. Sokolovsky and V. Mnatsaganova.

No. 8, 1949. *Questions in the Building of Socialism in U.S.S.R. and the Works of Stalin, 1924–1926* : I. Gladkov. *On Some Effective Methods of Struggle for High Quality in Industrial Production* (*from the experience of the Moscow motor factory named after Stalin*) : V. Balabushevitch. *The Foreign Exchange Crisis in England* (*Devaluation of the Pound Sterling*) : Z. Atlas.

No. 9, 1949. *The Multiform Utilisation of Reserves for Raising Labour Productivity* : G. Prudensky. *A Complex Analysis of the Sources of Higher Labour Productivity* (*the experience of the Kirov factory for agricultural machinery, the Red Star*) : A. Merkulov. *A. N. Radishchev—Author of the Revolutionary-Democratic Tendency in Russian Economic Thought* (*On the Bicentenary of his Birth*) : E. Prikazchikova. *Questions of National-Colonial Struggles after the Second World War* : E. Zhukov. *On the Leading Rôle of the Working Class in National-Liberation Movements among the Colonial Peoples* : V. Maslennikov. *The Growth of Unemployment in Capitalist Countries in the Post-war Period* : A. Shapiro. *On the Subject Matter and Composition of the Branches of Economic Science* : S. Gorodetsky. *The Unfolding of the Economic Crisis in Capitalist Countries* : V. Leonidov.

The Oriental Economist.

Vol. XVI, No. 360. *Careful with Tax Reform. Working Women. Sterling Area Market. Private Trade Problem. Copper.*

Vol. XVI, No. 361. *Renovation of Industrial Plants. Rationalization and Latent Unemployment. New Trade Procedure. Pound Devaluation and Spinning. Cement.*

NEW BOOKS.

British.

AIYANGAR (K. V. R.). Indian Cameralism. A survey of some aspects of Arthas'āstra. Madras: Adyar Library, 1949. 8½". Pp. xx + 184. Rs. 7.

[These are lectures given by the author as special Reader in Calcutta University in 1934. The word *Cameralism* is intended to denote the approach to economic problems and activities from the viewpoint of ministers of state. The five lectures deal with: a Preliminary Survey of Western Cameralism; a General Survey of Indian Cameralism; Cameral Sociology; Cameral Polity and Law; Economics of Indian Cameralism; the Province of the State.]

ALLEN (F. L.). The Great Pierpont Morgan. London: Victor Gollancz, 1949. 8½". Pp. x + 306. 15*s.*

[Reviewed in this issue.]

Annual Market Review, 1948. Bombay: Premchand Roychand, 1949. 9½". Pp. 86.

[A review of the year 1948, its effects upon the Indian economy generally and upon the commodity and share markets. As in the past, the review is replete with statistical material covering many aspects of the Indian economy.]

BALOGH (T.). Dollar Crisis, Causes and Cure. Oxford: Basil Blackwell, 1949. 8½". Pp. xlvi + 269. 15*s.*

[To be reviewed.]

BERTRAM (G. C. L.). Population Trends and the World's Biological Resources. London: Cassell (The Eugenics Society), 1949. 8½". Pp. 38. 2*s.*

[This may be described as an essay in biological economics. It gives a popular, and in the main qualitative, account of the problems of population growth and of the potential world developments of food supplies. It touches briefly at the end on the problems of overpopulation and of the limitation of population growth.]

BRITISH INSTITUTE OF MANAGEMENT. Conference Series No. 2. Management and the Financier. Management in Private Enterprise and Nationalized Industry. London: British Institute of Management, 1949. 9". Pp. 24. 2*s.* 6*d.*

[This includes two papers. The first by Mr. H. N. Hume, Chairman of the Charterhouse Investment Trust, discusses *Management and the Financier.* The second by Sir Miles Thomas discusses *Management in Private Enterprise and Nationalised Industry.* Both papers are highly stimulating. Neither lends itself to summary.]

BRITISH INSTITUTE OF MANAGEMENT. Conference Series No. 3. Business Forecasting. London: British Institute of Management, 1949. 9". Pp. 34. 2*s.* 6*d.*

[The paper, by Mr. A. W. Willsmore, on the techniques of business forecasting describes various alternative methods of making forecasts: an arbitrary increase over the previous year; an attempt to extrapolate past trends and to check from travellers' and other reports; estimates of potential customers, from such evidence as car registrations, and the assumption of the same (or a changed) ratio to this base; an analysis of past sales and correlation, after correction for trend and seasons, with an index of business activity; a national income and total consumption analysis; straightforward market research. The author has something to say about each of these. An interesting discussion follows.]

BRITISH INSTITUTE OF MANAGEMENT. Conference Series No. 6. Standard Accounting System. London: British Institute of Management, 1949. 9". Pp. 35. 2*s.* 6*d.*

[A paper read to a Conference held by the Institute at Cliftonville in May 1949, with a record of the subsequent discussion. The reader of the paper, Mr. Ian Morrow of Robson, Morrow and Co., argued that financial and cost accounts can with advantage be integrated, that properly devised accounting control can be of great assistance to management, and that research be undertaken to establish the principles of an accounting control which can be standardised.]

British Institute of Management. Conference Series No. 9. Indices of Productivity. London: British Institute of Management, 1949. 9″. Pp. 36. 2*s*. 6*d*.

[This contains a valuable paper by Mr. L. H. C. Tippett of the Shirley Institute on methods of measuring productivity and a record of Mr. Tippett's remarks in introducing it and of the subsequent discussion. The latter was mainly concerned with a resolution proposed by Mr. Tippett, indicating the need for systematic study of productivity and the publication of results. In the end a resolution was approved in a slightly more complicated form advocating the study of productivity and the devising of suitable indices both for individual control and inter-firm comparison, and that results should be published with proper safeguards.]

British Institute of Management. Conference Series No. 10. Financial Information and Joint Consultation. London: British Institute of Management, 1949. 9″. Pp. 28. 2*s*. 6*d*.

[A paper by Mr. G. Chelioti, Director of the General Electric Company, on the question whether the disclosure of the financial position of an undertaking to its employees is an essential feature of effective joint consultation. Mr. Chelioti himself proposed a motion that it is desirable to include the financial results in the scope of joint consultation. After a lively discussion agreement was limited to the desirability of further investigation.]

British Institute of Management. Conference Series No. 11. Nationalized Audit Service. London: British Institute of Management, 1949. 9″. Pp. 36. 2*s*. 6*d*.

[This paper was delivered at a Conference at Cliftonville, by Mr. F. C. Hooper. He asks whether there is need for an independent "management audit" service for nationalised undertakings. He concludes that at least one member of the audit should be a person drawn from outside the government service, of the very highest professional and public standing.]

British Institute of Management. Winter Proceedings 1948/49. No. 6. The Management of Multiple Shops. London: British Institute of Management, 1949. 9″. Pp. 35. 2*s*. 6*d*.

[A paper by Mr. Alan Sainsbury on the problems of the operations of Multiple Shops, which covers such topics as buying and merchandising policy, branch supervision, warehousing and distribution, finance, stock control, budgetary control and statistics. He also touches on wider problems of personnel management and training and property management. In conclusion, Mr. Sainsbury stresses that unless there is real leadership, "the result will only be an untidy group of separate units." For success there must be integration of effort and not conflict between the branches and the central management.]

Clapham (Sir John). A Concise Economic History of Britain from the Earliest Times to A.D. 1750. London: Cambridge University Press, 1949. 8″. Pp. xv + 324. 12*s*. 6*d*.

[To be reviewed.]

Clark (G. N.). Science and Social Welfare in the Age of Newton. Oxford: Clarendon Press, 1949. 7″. Pp. 159. 8*s*. 6*d*.

[To be reviewed.]

Cohen (Ruth). The Economics of Agriculture. Sixth impression revised. London: Nisbet, 1949. 7½″. Pp. xvi + 216. 6*s*.

[To be reviewed.]

Courtauld (Samuel). Ideals and Industry. London: Cambridge University Press, 1949. 7½″. Pp. xviii + 134. 10*s*. 6*d*.

[To be reviewed.]

Cruickshank (R. J.). Charles Dickens and Early Victorian England. London: Sir Isaac Pitman, 1949. 8½″. Pp. xii + 308. 20*s*.

[To be reviewed.]

Curtis (**Lionel**). World Revolution in the Cause of Peace. Oxford: Basil Blackwell, 1949. 7″. Pp. xv + 167. 7*s*. 6*d*.

[This an eloquent plea for an international world federation of democratic powers, and the summoning of a convention to work out a constitution. The main essentials of such a constitution are sketched in this book. Mr. Curtis likens the present position of the democratic countries to that of the American States before the Philadelphia Convention of 1787. A dramatic change was wrought almost overnight, and beyond the wildest expectations of the supporters of federation. Nothing but a similar dramatic change will, in Mr. Curtis's view, save Europe. The conditions, he argues, make any alternative unworkable and fruitless.]

Dillard (**Dudley**). The Economics of J. M. Keynes. The theory of a monetary policy. London: Crosby Lockwood, 1948. 8½″. Pp. xv + 364. 18*s*.

[To be reviewed.]

Driver (P. N.). Problems of Zamindari and Land Tenure Reconstruction. Bombay: New Book Company, 1949. 8½″. Pp. xx + 310. Rs. 12/8.

[To be reviewed.]

Everard (S.). The History of the Gas Light and Coke Company, 1812–1949. London: Ernest Benn, 1949. 8½″. Pp. 428. 63*s*.

[To be reviewed.]

Fighting Inflation, 1945–1949. Sydney: Fabian Society of N.S.W., 1949. 8½″. Pp. 30. 1*s*.

[An account of the methods used to prevent inflation since 1945 in Australia. The Commonwealth Government sought to tackle the situation from three sides—increasing supplies, restricting demand and, as an interim measure, controlling prices. A chapter is devoted to each of these. The pamphlet argues that Australia, under a Labour Government, suffered between 1939 and December 1948 less inflation than almost any other country except New Zealand and Great Britain.]

German Steel at the Cross Roads. London: Iron and Steel Federation, 1949. 10″. Pp. 6.

[A useful account of the history of inter-allied vacillation on the problems of the post-war level of the German steel industry, followed by a brief account of the current position. Crude steel production in the Bizone has levelled off at a rate of about 9 million tons a year. This is not to be regarded as proving that the figure of 11 million tons for German requirements is exaggerated. It is the result partly of financial stringency, partly of more general mal-adjustments of the economy. Material supplies are now easier. German prices have been closely in line with British, and if they were readjusted to cover costs and to eliminate subsidies would be higher than those either of the United Kingdom or the United States. In order to still the German outcry against dismantling, which will continue so long as dissension between the Allies can be encouraged, an agreement between the occupying powers over the future organisation of the German steel is urgently needed.]

Ghosh (B. B.). Indian Economics and Pakistani Economics. Calcutta: Mukherjee, 1949. 8½″. Pp. xv + 627. Rs. 10.

[This book gives a detailed and useful but rather pedestrian account of the resources and industries of India and Pakistan. It contains a vast amount of information about the different crops and products of India as well as about the banking and credit systems. Its main virtue is that for some of the important products it enables a reader to distinguish the outputs of India and Pakistan respectively.]

HALL (MARGARET). Distributive Trading. An economic analysis. London: Hutchinson's University Library, 1949. 7″. Pp. 203. 7*s.* 6*d.*

[To be reviewed.]

HEYWORTH (SIR GEOFFREY). The Organization of Unilever. London: Lever Bros., 1949. 8″. Pp. 16 + vi.

[An account by Sir Geoffrey Heyworth, Chairman of the Company, of the organisation of Unilevers. It describes the structure of control, the arrangement of national managements, the working principles of control, the budget of capital expenditure, the methods of selection of top management and the attempts to make effective central control consistent with effective delegation.]

HOBSON (J. A.). Revised by HARROD (R. F.). The Science of Wealth. London: Oxford University Press, 1950. 6½″. Pp. ix + 214. 5*s.*

[To be reviewed.]

Iron and Steel Bill. Some Arguments for and against. London: British Iron and Steel Federation, 1949. 9″. Pp. 62.

[The Iron and Steel Federation puts its case against nationalisation. In its view the argument that the industry is a private monopoly is invalid; its prices and development policy are controlled by the government; the thesis that the State must own in order to control is invalid. Nothing in the Bill, it is argued, will enable better, cheaper steel to be produced. It carries public ownership far beyond the limits of iron and steel production into subsidiary activities, and yet splits what is essentially one industry into two parts, one publicly and one privately owned. It weakens the responsibility of managements and is bound to create over-centralisation.]

JONES (A.). If Steel is Nationalised. London: Hodder and Stoughton, 1949. 9″. Pp. 32. 1*s.*

[A handsomely produced and illustrated criticism of the Steel Bill which seeks to show that the steel industry has acted throughout the last decades in the national interest and can be an effective and loyal partner in government economic policy without government ownership.]

KAREDA (F.). East and West. Facts from behind the Iron Curtain. No. 5. Estonia in the Soviet Grip. London: Boreas Publishing Company, 1949. 8½″. Pp. 100. 3*s.* 6*d.*

[An account of life and conditions in Estonia under Soviet occupation from 1947 to 1949. The avowed purpose of the book is to awaken Western opinion to a consciousness of the horrors of life under Soviet rule. " With iron consistency and unparalleled ruthlessness the Soviet regime is turning the human beings living under it into obedient robots. . . . This moral coercion is coupled with a drastic economic exploitation calculated to reduce the living standard of the nation to the Soviet level, admittedly the lowest in the civilised world."]

KRISHNAMURTI (B. V.). Pricing in Planned Economy. Bombay and London: Oxford University Press, 1949. 8½″. Pp. 139. 11*s.* 6*d.*

[This book has developed from a Ph.D. Thesis of the University of Bombay. The author advances the proposition that " the *laisser-faire* principle rests on the assumption of rising marginal costs. But the economic progress of the last two hundred years has made this assumption woefully obsolete. Over a wide sector of economic activity, production is carried on under conditions of falling marginal costs. As such atomistic competition has proved not merely ineffective but positively obstructive in attaining the position of maximum net advantage to the community." Using mathematical techniques the author tackles in successive chapters the problems of freedom of choice and consumers' sovereignty, of the optimum allocation of productive resources, the ideal output of the firm, its size, equipment and product differentiation and finally the criteria for conducting large enterprises in the interest of maximum general welfare. This is a serious and competent piece of work which deserves attention.]

LALWANI (K.). Industrial Efficiency in India. Calcutta : Nalanda Press, 1949. 8½″. Pp. vii + 266 + viii. 12*s*. 6*d*.

[The author begins by emphasising the importance of increased efficiency in India and then goes on to analyse the bases of industrial efficiency. After a chapter which draws attention to the relative importance of different cost-items and makes comparison of Indian costs for some products with foreign costs, he goes on in subsequent chapters to discuss the effects on efficiency of management, size, rationalisation, labour, wages, industrial peace, welfare and sundry other factors. He concludes with a more general discussion of the advantages of a balanced economy, competitive efficiency, production targets, the fundamentals of an Indian plan and the rôle of the State.]

LENGYEL (S. J.) and BEECROFT (R. M.). The Cost of Distribution of Consumption Goods in Australia and Elsewhere. Melbourne University : Faculty of Economics and Commerce (London : Wadley and Ginn), 1949. 9″. Pp. 94. 35*s*.

[To be reviewed.]

LEWIS (W. A.). The Principles of Economic Planning. London : Allen and Unwin and Dennis Dobson, 1949. 8½″. Pp. 128. 7*s*. 6*d*.

[Reviewed in this issue.]

LYNTON (R. P.). Incentives and Management in British Industry. London : Routledge and Kegan Paul, 1949. 8½″. Pp. viii + 212. 15*s*.

[To be reviewed.]

MACGREGOR (D. H.). Economic Thought and Policy. London : Oxford University Press, 1949. 6½″. Pp. 182. 5*s*.

[To be reviewed.]

MANSERGH (N.). The Commonwealth and the Nations. London : Royal Institute of International Affairs, 1948. 7″. Pp. viii + 229. 8*s*. 6*d*.

[This is a study and appraisal of the developments, mainly in the political field, of relations between the countries of the Commonwealth and the United Kingdom.]

MISES (L. VON). Human Action. A Treatise on Economics. London : William Hodge, 1949. 8½″. Pp. xv + 889. 42*s*.

[To be reviewed.]

MOORE (W. G.). A Dictionary of Geography. Harmondsworth : Penguin Books, 1949. 7″. Pp. 182. 1*s*. 6*d*.

[This Penguin dictionary of geographical terms is by the author of that very stimulating other Penguin, *The World's Wealth*. It contains definitions, and in many cases illustrations, of the vast majority of technical terms used in physical geography.]

MORRISON (HERBERT). How London is Governed. London : James Barrie, 1949. 7½″. Pp. xiv + 191. 8*s*. 6*d*.

[This is a revised edition of the little book, first published in 1935, in which Mr. Herbert Morrison describes the powers and organisation of the many and varied local authorities of Greater London. It has been drastically revised and in parts rewritten. One new chapter deals with central *versus* local administration, another with civil defence. The chapter on local finance has been greatly changed, and it describes fully the expenditure and income of 1946–47. The book is written for popular consumption, but contains a great deal that is valuable to a more serious reader.]

NATIONAL INSTITUTE OF ECONOMIC AND SOCIAL RESEARCH. Register of Research in the Social Sciences in Progress and in Plan and Directory of Research Institutions. Edited by Feodora Stone. London : Cambridge University Press, 1949. 10″. Pp. 155. 15*s*.

[This register grows larger year by year. There are now listed as many as 1,064 separate pieces of current research in the Social Sciences. The usefulness of this now invaluable guide has been further enhanced by the addition of a section which brings together information nowhere else conveniently accessible in the form of a Directory of Research Institutions. This lists the various institutions, and gives their addresses, functions and policy, organisation, research arrangements and publications. It also lists the main Trusts which finance research and describes their functions and policy.]

NEALE (E. P.). Guide to New Zealand Official Statistics. Christchurch : Whitcombe and Tombs, 1949. 8½″. Pp. 149.

[An enlarged, second edition of a handbook first published in 1938. It provides a guide to the main sources of statistics in each main field, gives definitions wherever necessary and indicates the methods of calculation of the chief concepts.]

NOGARO (B.). A Short Treatise on Money and Monetary Systems. London : Staples Press, 1949. 8½″. Pp. 214. 17*s.* 6*d.*

[This is the English edition of Professor Nogaro's book, entitled *La Monnaie et les Systèmes Monétaires*, which was reviewed in the ECONOMIC JOURNAL for December 1946. The present text is virtually identical with that of the French edition, apart from the insertion of a few pages dealing with the very interesting inflation (and stabilisation) of the Hungarian currency in 1945–46—an inflation which far exceeded in extent and intensity the great German inflation of 1923.]

NORMANO (J. F.). The Spirit of Russian Economics. London : Dennis Dobson, 1950. 8½″. Pp. 130. 8*s.* 6*d.*

[The American edition of this book was reviewed by Mr. M. H. Dobb in the ECONOMIC JOURNAL of December 1946.]

PARSONS (TALCOTT). The Structure of Social Action. 2nd edition. London : Allen and Unwin, 1949. 9″. Pp. xii + 817. 55*s.*

[To be reviewed.]

PENN (K.) (Ed.). S.D.I. : being an account of the Soft Drinks Industry in Britain during the emergency years 1942–1948. London : Soft Drinks Industry (War Time) Association, 1949. 8½″. Pp. xvi + 106.

[An account of the Soft Drinks Industry in war-time, its concentration, the temporary abandonment of trade marks, the zoning of supplies and the history of the Soft Drinks Industry (War Time) Association Ltd. which became the instrument of control and distribution.]

PIGOU (A. C.). Wage Statistics and Wage Policy. London : Oxford University Press, 1949. 7″. Pp. 44. 2*s.*

[The Stamp Memorial Lecture of 1949.]

Planning and Competition in Industry. London : British Iron and Steel Federation, 1949. 10″. Pp. 13.

[This contains the substance of an article read by Mr. Robert Shone, Economic Director of the British Iron and Steel Federation, to the Economic Section of the British Association.]

The Population Problem. Summary of the Report of the Royal Commission on Population. With a foreword by Sir Hubert Henderson. London : "News Chronicle" Publications Department, 1949. 8½″. Pp. 80. 1*s.*

[An abridged version of the Report of the Royal Commission on Population, prepared by the *News Chronicle*. This will be extremely useful for those who do not wish to go into the full detail of the report itself, but wish, nevertheless, to master the main issues. It contains a number of the key tables and diagrams and gives summaries of the arguments of each chapter.]

The Public Supervision of the Iron and Steel Industry. London : British Iron and Steel Federation, 1949. 10″. Pp. 8.

[An account of the work of the Iron and Steel Board which, when it was dissolved on March 31, 1949, had exercised supervision over the industry during an important two and a half years in which its post-war development policy had been formulated and carried down to the level of detailed planning.]

QURESHI (A. I.). The Economic Development of Hyderabad. Vol. I. Rural Economy. Bombay and London: Longmans, 1949. 10″. Pp. 358. 25*s.*

[The author of this monograph was formerly Economic Adviser to the Nizam's Government and Professor of Economics in the Osmania University. This first volume deals with problems of the rural economy of the State; the second volume, now in the press, will deal with industry and finance. The book sets out the natural resources and population of Hyderabad, and then discusses in detail the measures that have been taken to increase agricultural production.]

RAJKUMAR (N. W.). Development of the Congress Constitution. New Delhi: All India Congress Committee, 1949. 8½″. Pp. 147. Rs. 2/14/.

[A history of the constitution of the Indian Congress from its first beginnings in 1885 down to the latest revision passed in April 1948.]

RASTOGI (T. N.). Indian Industrial Labour (with special reference to Textile Labour). Bombay: Hind Kitabs, 1949. 8½″. Pp. 236. Rs. 8–8.

[Mr. Rastogi is Labour Officer of the Calico Mills at Ahmedabad. He discusses in this book the recent history of labour and industrial relations, labour administration, employer-employee relationships, industrial housing, industrial wage structure, social insurance, labour legislation, trade unionism and personnel management. In a final chapter there is a very full discussion of the possibilities and difficulties of devising a scheme of universal profit sharing as a means to industrial peace. The book is mainly addressed to other existing or potential labour officers, but it is also a text-book of existing Indian labour policies.]

RUSSELL (R. S.). Tariff Preferences in Western Europe. London: Empire Economic Union, 1949. 8½″. Pp. 56.

[This book argues that economic unity in Western Europe is a necessity; that it must not, however, weaken the economic relations of the British Empire; that this can best be done by dovetailing the Empire system of preferences into a Western European System. This would involve the abolition or relaxation of the Most Favoured Nation Clause. But the author points out that the whole concept of the European Recovery Programme is an infringement of the principle of non-discrimination. The book considers the possibilities of modifying the existing preferences. He takes as examples the United Kingdom, Canada and Australia, France and pre-war Germany.]

SASTRY (N. S. R.). A Statistical Study of India's Industrial Development. Bombay: Thacker, 1947. 9½″. Pp. 191. Rs. 12/8.

[This book, which represents a Thesis approved for the Ph.D. degree of London University, analyses seven large-scale industries in India—cotton, jute, sugar, iron and steel, cement, coal and paper. It shows the development of these industries over the period 1900–37 in terms of location, size of units, growth of production, productivity and labour employed. In a final section the author sets out his conclusions. With the exception of the jute industry, which depends on foreign markets and the power to compete in them, these industries grew up under the shelter of tariffs. The author argues that this did not, in effect, result in a misdirection of Indian resources. The chief difficulty of India's industrial development is the shyness of capital to run industrial risks. The effect of protection was to divert into useful channels in industry a stream of funds which would otherwise have been used unproductively in acquiring hoards of precious metals.]

SAYANA (V. V.). The Agrarian Problems of Madras Province. Madras: Business Week Press, 1949. 8″. Pp. xxiv + 332. 20*s.*

[The author of this monograph on the Agrarian Problems of the Madras Province is Lecturer in Agricultural Economics in the University of Bombay. Dr. Sitaramayya, President of the Indian National Congress, stresses in a foreword, the mutual repercussions of geographical and physical environment and national character, and these relations are in the author's mind throughout his discussion of the physical resources and fertility of India, the systems of tenures and tenancies, of taxation, of productivity which account for the prosperity of the people and the efficiency of the socio-economic system. The first two chapters deal with the physical and human resources of the province; the next four describe the land system; the land revenue, the economic effects of the Zamindari system and the causes and economic significance of land transfers; the remaining five chapters cover indebtedness and rural credit, farm tenancy, agrarian labour, landlord–tenant relations, agrarian reform. The book is based upon a considerable amount of field-work and personal investigation and is a useful addition to the literature of Indian agricultural economics.]

SCHACHT (H.). Account Settled. Translated by Edward Fitzgerald. London: Weidenfeld and Nicolson, 1949. 8½″. Pp. 327. 15*s*.

[To be reviewed.]

Secret Ballots in Trade Unions. Sydney: Fabian Society of N.S.W., 1949. 8½″. Pp. 8. 6*d*.

[Compulsory secret ballots have become an issue in Australia. On the one hand it is argued that secret ballots prevent intimidation; on the other that the complications and formalities of secret ballots will make minor issues which could have been quickly settled into major disputes. The whole problem has been made more difficult by the use of the open vote by ruthless Communist ministries to enforce the Party line; some who formerly believed that the open vote was to be preferred are now more inclined to see the virtues of the secret ballot.]

SMITH (HENRY). Introduction to the Study of Economics. London: Sylvan Press, 1949. 7″. Pp. vi + 224. 10*s*. 6*d*.

[To be reviewed.]

THOMAS (IVOR). The Socialist Tragedy. London: Latimer House, 1949. 7½″. Pp. 254. 10*s*. 6*d*.

[Reviewed in this issue.]

TODD (J. A.). The Mechanism of Exchange. A handbook of economics (currency, banking, and trade). Sixth edition. London: Oxford University Press, 1949. 7½″. Pp. xi + 290. 10*s*. 6*d*.

[It is a pity that in adding a short chapter describing "The Effects of the Second World War" to bring this useful text-book up to date Professor Todd has included a number of tendentious statements. It does not seem helpful, for instance, for a student to read: "Meanwhile the forces of Lombard Street were mobilizing for the fight against the Treasury's 2½% policy" without any further explanation (p. 249) nor of the tendency of "The money powers . . . to sabotage any government of the Left by destroying credit" (p. 246). Professor Todd seems also to be willing to blame anything other than inflation in this country for our present discontents.]

The Total View. A study of management consultancy at work. London: Wallace Attwood Company, 1949. 11″. Pp. 16.

[An account of the functions of the Management Consultant which draws chiefly on the experience of Mr. Attwood of the Wallace Attwood Company. It indicates, in very broad terms, the sort of weaknesses which have been revealed in the organisation of firms and the sort of advice which it has been possible to give.]

TRIVEDI (A. B.). Post-War Gujarat. An economic survey after World War II. Bombay: Trivedi, Khalsa College, 1949. 8½″. Pp. x + 289 + xxiv. Rs. 19–8.

[Professor Trivedi, of Khalsa College, Bombay, who is the author of many books on Kathiawar and Gujarat, has made a post-war economic survey of Gujarat. It analyses the general economic background, the state of agriculture, the food and dairy industries, textiles and industries connected with textiles, woodwork, metal-work, leather and other industries. He finally considers the problems of economic development. He stresses the urgency of dealing with erosion, the importance of a drive towards increased industrialisation, the need for more intensive agriculture, the opportunities for a number of small industries. But he sees the future development of Gujarat mainly in terms of the more general economic advance of India as a whole.]

WISE (L.). Great Money Reformers. No. 1. *Silvio Gesell.* Pp. 17. No. 2. *Arthur Kitson.* Pp. 17. No. 3. *Frederick Soddy.* Pp. 15. London: Holborn Publishing and Distributing Company, 1949. 8½". 1*s.*

[These three unattractive and badly printed pamphlets seek to give substance to the theories of three men whom most economists would class as "currency cranks." Certainly Mr. Wise tells us something about them as people, but he is not skilled enough to make their theories intelligible to a professional student of economics. Silvio Gesell, indeed, comes alive, and his stamped money and negative rate of interest is something whose significance every student can appreciate. But it is much harder, with such help as Mr. Wise affords, to make head or tail of Kitson or Soddy. Both were, perhaps, before their time in emphasising that excessive currency restriction is capable of causing wholly unjustifiable unemployment. But neither seems to get near the root of the question of just how freely currency should be issued if the fire of inflation is to be escaped as well as the frying-pan of unemployment.]

American.

ANDERSON (M. D.). Total Business Fluctuations. Gainesville, Florida: Kallman Publishing Co., 1949. 9". Pp. 148. $3.75.

[To be reviewed.]

BECKWITH (B. P.). The Economic Theory of a Socialist Economy. Stanford University Press (London: Geoffrey Cumberlege), 1949. 9". Pp. viii + 444. 36*s.*

[To be reviewed.]

BRIGHT (A. A.) The Electric-Lamp Industry: technological change and economic development from 1800 to 1947. New York and London: Macmillan, 1949. 8". Pp. xxviii + 526. 37*s.* 6*d.*

[This monograph deals with the technological change and the economic development of the electric-lamp industry from 1800 to 1947. After tracing the early history, the author is primarily concerned with monopolistic control of the industry, the rise of competition after the first period of monopolisation and anti-trust action, the effects of the international cartel generally, and the effects of monopoly and patent rights on innovation.]

BUTTERS (J. K.) and NILAND (P.). Effects of Taxation. Inventory Accounting and Policies. Boston: Graduate School of Business Administration, Harvard University, 1949. 8". Pp. xvii + 330. $3.75.

[This monograph seeks to answer such questions as the size of inventory profits and losses and their economic importance or unimportance, the attitude of business to them, the significance of different inventory methods, the relation of commonly used methods of inventory valuation to different concepts of profits. The conclusions are that inventory profits and losses are often large. Business has increasingly relied on last-in-first-out accounting since it was authorised in 1938, with huge tax-savings in some cases. The inclusion of inventory profits and losses in income is held to increase greatly the savings of optimism and pessimism. The author concludes that it would be better to encourage the concept of income which excludes the distorting effects of inventory profits and losses.]

CHANG (PEI-KANG). Agriculture and Industrialization. The adjustments that take place as an agricultural country is industrialized. Cambridge, Mass.: Harvard University Press (London: Geoffrey Cumberlege), 1949. 8½". Pp. xii + 270. 27*s.* 6*d.*

[To be reviewed.]

CORDASCO (F.). A Junius Bibliography, with a preliminary essay on the political background, text and identity. New York: Burt Franklin, 1949. 9″. Pp. 125. $6.00.

[The author, a collector of Juniana, acquired some years ago the private Junian papers of Sir David Brewster, and was led into the paths of bibliography. Since no satisfactory bibliography existed, he has attempted to provide one. But his interest began with the identity of Junius. This volume begins with a Preliminary Essay which sums up for the view that he was Laughlin Macleane. The bibliography is in three parts: general bibliographies and references; editions of the Letters; works and articles about Junius.]

Cowles Commission for Research in Economics Report for Period January 1, 1948–June 30, 1949. University of Chicago, 1949. 9″. Pp. 47.

[A report of the Research Activities of the Cowles Commission during 1948 and the first half of 1949.]

CREAMER (DANIEL) and CREAMER (HENRIETTA L.). Gross Product of Puerto Rico 1944–1946. University of Puerto Rico, 1949. 8½″. Pp. 14.

[This short booklet is a continuation of the estimates of the gross expenditure of Puerto Rico and its composition which have already been noted in this JOURNAL (see September 1947, p. 417, and December 1948, p. 627). Many of the figures for the year ending June 30, 1944, have been revised, and estimates have been added for 1945 and 1946, thus bringing the expenditure composition for Puerto Rico up to the same year as the information available on the balance of external payments of that country (see this JOURNAL, December 1948, p. 629). In addition to the statistical material there are brief notes on sources of data and methods of estimate. This booklet should be in the hands of all who have followed the interesting series of papers on different aspects of the social accounts of Puerto Rico, to which reference has been made above.]

DAVIE (M. R.). Negroes in American Society. New York and London: McGraw-Hill, 1949. 9″. Pp. ix + 542. 38*s*. 6*d*.

[To be reviewed.]

DAVIS (PEARCE). The Development of the American Glass Industry. Cambridge, Mass.: Harvard University Press (London: Geoffrey Cumberlege), 1949. 8½″. Pp. xiv + 316. 32*s*. 6*d*.

[A history of the evolution of glass manufacture in the United States. It was one of the early Colonial industrial enterprises, but most of the early attempts resulted in failure. By 1780 the industry had almost disappeared. But between then and 1820 the art of glass-making became permanently established in America. Prof. Pearce Davis describes the industry as it was in 1820 and goes on to give a full account of its subsequent growth, the influence of tariffs, the introduction of mechanical techniques both in sheet glass and bottle making, and finally the evolution of the pressed- and blown-glass industries and the development of plate glass. There is in the view of the author "no evidence that technological improvement was causally related to a long-sustained policy of tariff protection. Rather than upon tariff advantage, the advent of industrial revolution in glass-manufacture appears to have rested fundamentally upon the general requirements and pre-requisites of the evolutionary process of mechanical invention."]

DEARING (C. L.) and OWEN (W.). National Transportation Policy. Washington, D.C.: Brookings Institution, 1949. 9″. Pp. xiv + 459. $4.00.

[To be reviewed.]

DORAU (H. B.) and FOSTER (J. RHOADS). The Effects of Higher Income Taxes on Electric Utility Enterprises. Ridgewood, N. J.: EcoStat Research, 1949. 11″. Pp. 104.

[An investigation of the effects on the financial outlook for electricity supply undertakings of higher taxation of company profits. The report suggests grave difficulties of balancing income and expenditure in view of an increase of federal, state and local taxes from 15·2% of operating revenue in 1937 to 18·3% in 1948.]

ELBERTON SMITH (R.). Customs Valuation in the United States. A study in tariff administration. University of Chicago Press (Cambridge University Press), 1949. 9″. Pp. xii + 380. 42*s*.

[To be reviewed.]

FRANKLIN (B.) and LEGMAN (G.). David Ricardo and Ricardian Theory. A bibliographical checklist. New York : Burt Franklin, 1949. 9″. Pp. vi + 88.

[The authors describe this as the first of a projected series of bibliographies undertaken to stimulate bibliographical research in economics and the social sciences. The bibliography falls into two parts : the first a list of the works of Ricardo, arranged chronologically; the second a list of works about Ricardo, Ricardiana and Ricardian theory. Neither, it would appear, can claim to be absolutely exhaustive, but the resultant checklist may prove a useful bibliographical tool.]

GILL (F. W.) and BATES (G. L.). Airline Competition. Boston : Graduate School of Business Administration, Harvard University, 1949. 8″. Pp. xv + 704. $5.75.

[A study for the Harvard Business School of the effects of competition upon the quality and price of air-line service and the self-sufficiency of the United States domestic air-lines. Using, at appropriate points, the case-study method, the authors have sought to discover what happened when an additional operator was licensed on a service. " The findings of this study support the conclusion that the basically competitive air transportation system envisioned by the Civil Aeronautics Act of 1918 is in the public interest." But while sometimes competition has improved service, sometimes it has actually resulted in worse service and higher fares. The authors find no support for the presumption of the Civil Aeronautics Board in favour of competition on any route which offers sufficient traffic to support competing services without unreasonable increase of total operating cost.]

HOSKINS (H. L.). The Atlantic Pact. Washington D.C. : Public Affairs Press, 1949. 9″. Pp. 104. $2.50.

[An attempt to see how the Atlantic Pact fits into American foreign-policy, its implications for America, the circumstances that have required it and the problems of its implementation.]

JESNESS (O. B.). (Ed.). Readings on Agricultural Policy. Philadelphia : Blakiston Company (American Farm Economic Association), 1949. 9″. Pp. xi + 470. $4.75.

[To be reviewed.]

KAPP (K. W.) and KAPP (LORE L.). (Ed.). Readings in Economics. New York : Barnes and Noble, 1949. 8½″. Pp. 444. $1.50.

[This book of Readings in Economics is divided into three parts. The first includes economic doctrines of a pre-capitalist era. There are selections from Thomas Aquinas and Martin Luther. The second part begins with the mercantilists, with passages from Bodin and von Hornick. It continues with the classical economists, starting with Petty, Hume, Quesnay, Franklin, going on to Adam Smith, Malthus, Mill, Say. The historians are illustrated by Comte, Jones and Schmoller. They are followed by socialists, from Owen to Lenin, by the Neo-classical writers, including Marshall, Wicksell, Schumpeter, and this part ends with theories of instability, illustrated by Wicksell, Mitchell, Lerner. Finally, the third part includes three passages covering the economics of " a post-capitalist society ", illustrated from Russian writing and from the British Economic Survey of 1947. The whole volume, compressed into 440 pages, can give only a smell of each writer and his views. The selection no doubt was partly dictated by circumstances and the consent of owners of copyrights. But it is at least open to question whether Marshall is best illustrated by his review of Mill's Theory of Value, whether a volume which excludes Ricardo is really representative, and whether Keynes does not deserve a place in any such book.]

KEYNES (J. M.). Two Memoirs. A Defeated Enemy and My Early Beliefs. New York: Augustus M. Kelley, 1949. 9″. Pp. 106. $1.75.

[This American edition of Lord Keynes's posthumously printed essays, reviewed in our last issue, is a lithographed replica of the London edition.]

LEVY (B. W.). Multi-Employer Bargaining and the Anti-Trust Laws. Philadelphia: University of Pennsylvania Press (London: Geoffrey Cumberlege), 1949. 8½″. Pp. 82. 12*s*.

[Mr. Levy is well qualified by training and experience to advise on the legality of multi-employer bargaining. He was trained and practised as a lawyer. He was acting Chairman of the Third Regional War Labor Board. He has more recently been lecturer in Labor Relations in the University of Pennsylvania School of Social Work. His conclusions are that there is nothing inherently unlawful in such collective bargaining. Whether an industry-wide agreement is unlawful will depend upon various factors, such as the degree of economic control by the combination, its scope and inferred purpose. It is possible that a union by negotiating identical individual agreements can permissibly adopt practices which would be illegal if they were a single multi-employer agreement. Any agreement which involves price-fixing, market allocation, or exclusion of non-conforming competitors products will, in certain cases at least, be forbidden. The validity of a closed-shop agreement or of restrictive practices may rest on the particular court's views of what is socially or economically good.]

MCMILLAN (S. S.) and GALBRAITH (J. K.). Individual Firm Adjustments under OPA. A study in the dynamics of flexible pricing. Bloomington, Indiana: Principia Press, 1949. 9″. Pp. xv + 256.

[To be reviewed.]

Major Problems of United States Foreign Policy, 1949–50. Washington D.C.: Brookings Institution, 1949. 9″. Pp. xv + 492. $3.00.

[To be reviewed.]

MITCHELL (WESLEY C.). Lecture Notes on Types of Economic Theory. 2 vols. New York: Turtle Bay Bookshop, 1949. 11″. Pp. 261 and 300.

[To be reviewed.]

MOSTELLER (F.) and Others. The Pre-Election Polls of 1948. Report to the Committee on Analysis of Pre-election Polls and Forecasts. New York: Social Science Research Council, 1949. 9″. Pp. xx + 396. Paper $2.50. Cloth $3.00.

[To be reviewed.]

MOULTON (H. G.). Controlling Factors in Economic Development. Washington D.C.: Brooking Institution (London: Faber and Faber), 1949. 8″. Pp. xii + 397. 29*s*.

[Reviewed in this issue.]

PHILLIPS (G. L.) and COLE (A. H.). England's Climbing-Boys. A history of the long struggle to abolish child labor in chimney-sweeping. Harvard University: Graduate School of Business Administration, 1949. 10½″. Pp. 61.

[To be reviewed.]

Planning Pamphlets. No. 69. *Toward Building a Better America.* By F. Altschul. Washington D.C.: National Planning Association, 1949. 7½″. Pp. 19. 35 cents.

[The title of this pamphlet gives little clue to its contents. It starts with an attempt to judge the problems of European recovery and the difficulties which have emerged since the Marshall Plan was first conceived. It goes on to argue that long-term world recovery will be achieved only in conditions in which the American economy is strong, prosperous and flexible. Thus the author argues that "a program for building a better America has become an urgent matter. It will no longer do to blunder into the future; we must plan for it. And if to some minds the word 'planning' still carries a malign connotation, it should be noted that we have been less hesitant to plan for others than we have been to plan for ourselves." Mr. Altschul makes some broad suggestions for the lines along which such a plan might be developed.]

PRIBRAM (K.). Conflicting Patterns of Thought. Washington D.C.: Public Affairs Press, 1949. 9″. Pp. 176. $3.25.

[To be reviewed.]

PRICE (A. H.). The Evolution of the Zollverein. A study of the ideas and institutions leading to German economic unification between 1815 and 1833. Ann Arbor: University of Michigan Press (London: Geoffrey Cumberlege), 1949. 9″. Pp. x + 298. 20*s.*

[To be reviewed.]

RUGGLES (R.). An Introduction to National Income and Income Analysis. New York and London: McGraw-Hill, 1949. 9″. Pp. viii + 349. 22*s.* 6*d.*

[To be reviewed.]

RUSSELL (DEAN). The TVA Idea. New York: The Foundation for Economic Education, 1949. 9″. Pp. 108. 75 cents.

[A study of government ownership of the means of production in American conditions. The validity of TVA accounting is challenged, and particular stress is put on the ignoring of the cost of interest on money invested in the project.]

SCHWEINITZ (DOROTHEA DE). Labor and Management in a Common Enterprise. Cambridge, Mass.: Harvard University Press (London: Geoffrey Cumberlege), 1949. 9″. Pp. viii + 186. 16*s.*

[This book deals with the war-time origins of labour-management committees in the U.S.A., the procedures by which they were established and under which they operated, and the matters which they handled. An attempt is also made to assess their results and the outlook for their future. Such committees correspond in general to the joint production committees, of which so many were established in this country during the war, and were usually separate and distinct from the machinery of collective bargaining. The great majority of the American committees, however, unlike those in Britain, do not seem to have given any particular attention to methods of production and questions such as those of improving the quality and quantity of work. Nine-tenths of them appear to have been more concerned with various types of propaganda in favour of the war effort. The author devotes considerable attention to the extent to which there is or can be mutuality rather than conflict between the interests of management and men, which is the fundamental problem for joint consultation if it is to flourish on any long-term basis. The discussion of the issue of whether labour-management committees exercised executive and not merely advisory functions raises the topic of where the function of management really resides in modern business. The author concludes that, although final authority rests with management, there is considerable diffusion of this authority as a result of the activities of such committees. Perhaps the most interesting topic touched on, though only briefly, is the question of how the two procedures of joint consultation and collective bargaining can be co-ordinated while still maintaining the advantages to be derived from separate discussion of the very different types of problem with which they deal.]

SWEEZY (P. M.) (Ed.). *Karl Marx and the Close of his System* by Eugen von Böhm-Bawerk, and *Böhm-Bawerk's Criticism of Marx* by Rudolf Hilferding. New York: Augustus M. Kelley, 1949. 8″. Pp. xxx + 224. $3.50.

[To be reviewed.]

TURNBULL (J. G.). Labor-Management Relations. A Research Planning Memorandum. New York : Social Science Research Council, 1949. 9″. Pp. viii + 112. $1.25.

[A first draft for the Social Service Research Council of a plan of research into Labor-Management. It contains notes on methodology and suggestions about practicable lines of work which may interest researchers in the United Kingdom.]

ULMER (M. J.). The Economic Theory of Cost of Living Index Numbers. New York : Columbia University Press (London : Geoffrey Cumberlege), 1949. 9″. Pp. 106. 15*s*.

[To be reviewed.]

YANAGA (CHITOSCHI). Japan since Perry. New York and London : McGraw-Hill, 1949. 9″. Pp. x + 723. 51*s*.

[A full account, not primarily devoted to the economic aspects, of the emergence of Japan as a great power. It contains, inevitably, chapters that are concerned with the economic development of Japan and the new economic and financial policies that were associated with it.]

South American.

Banco do Brasil S.A. 1808–1949. Relatório de 1948. Rio de Janeiro : Rodrigues, 1949. 9½″. Pp. lxxix + 378.

[This includes a general review of the Brazilian economy during 1948.]

French.

FOURASTIÉ (J.). Le Grand Espoir du XX^{e} Siècle : progrès technique, progrès économique, progrès social. Paris : Presses Universitaires de France, 1949. 9″. Pp. xxiii + 222. 320 fr.

[To be reviewed.]

LACOUR-GAYET (J.). De Platon à la Terreur. Paris : Spid, 1948. 7½″. Pp. 269. 300 fr.

[A series of short monographs whose connecting link is a discussion of the theory and methods of collectivist action throughout the ages. M. Jacques Lacour-Gayet tries hard to produce a complete theory of planning out of the " Republic " and the " Laws " without having to outline the complete political philosophy of Plato. The authors seem more at home in the actual description of collectivist measures. The description of the attempts to control prices in the latter stages of the French Revolution is an engaging piece of writing as well as of some historical interest.]

RUEFF (J.). Épitre aux Dirigistes. Paris : Gallimard, 1949. 7½″. Pp. 120. 180 fr.

[As the title suggests, this is hardly a scientific work. It is a passionate exhortation to planners, eloquently and sincerely expressed, to reconsider their fundamental assertions about the benefits of economic controls. M. Rueff's special self-appointed task is to extol the virtues of the price mechanism. " You aver," states M. Rueff, " that the necessity in a liberal regime of stimulating production limits the scope of fiscal methods designed to make progressive social policy compatible with the price mechanism. But a policy of price control, if one intends to implement it without recourse to the concentration camp, is subject by all accounts to the same limitations." . . . " Anyone who supports a genuine social policy, cannot but wish to maintain the use of the free pricing system." The material effects of planning are summed up in words which must sound particularly ominous to his fellow-countrymen—" l'économie planifiée ne connait pas bourgogne ou bordeaux, boeuf ou mouton, mais seulement le vin et la viande ! " The second half of the book seeks evidence for his convictions in events in France since the end of the war. He points to the paradoxical effects of price-fixing policy in 1947 which, while designed to cure inflation, only aggravated it *via* black-market operations. Parts of the final passages where the consequences of adopting the alternative courses of action—controls or free pricing—rival Mr. Harrod's eulogy of the price mechanism in "Are These Hardships Necessary?" On the other hand, exhortation leads too readily to exaggeration, and some prospective readers may doubt that the choice "which you will take, and which you cannot avoid making, is one of the most important in your history: it will determine, for a long time, the fate of human civilisation."]

SIEGFRIED (ANDRÉ). Afrique du Sud. Paris: Librairie Armand Colin, 1949. Pp. 158.

[M. Siegfried follows up his earlier post-war studies of Britain, the United States and Latin America with some impressions of a three months' visit to South Africa. One can hardly describe this as a penetrating study of the problems interesting to the outside observer, but occasionally the telling phrase and apt comparison make it more than a series of journalistic communiqués. There is an interesting comparison of the position of the Afrikaaner in the Union and the French Canadian. It may comfort some to think that M. Siegfried regards the doctrine of External Association with favour. "Le génie politique anglais est capable . . . de réaliser une fois de plus le miracle de prouver que l'illogique peut vivre."]

TRAVERSIN (G.). L'Agriculture en Grande-Bretagne. 2 vols. Paris: Centre National d'Information Économique, 1949. 9½". Pp. ix + 252 and 224.

[Reviewed in this issue.]

Belgian.

JACQUEMYNS (G.). Les Budgets Familiaux d'Ouvriers et d'Employés, 1947–1948. Brussels: Institut Universitaire d'Information Sociale et Économique, 1949. 9". Pp. 56.

[An analysis of family budgets collected during 1947 and 1948 to answer a number of questions on which the government was anxious to have more evidence. Among these were the standards of life of the very poor, the amount spent in different ways, which forms of expenditure had increased or diminished, as compared with pre-war, expenditure on the black market, the efficacy of price controls and so on. This book presents the full results of the inquiry.]

JACQUEMYNS (G.). La Maison Heureuse. Préférences des Belges en matière d'habitation et de rapports de voisinage. Brussels: Institut Universitaire d'Information Sociale et Économique, 1949. 9". Pp. 48.

[A survey of the preferences of Belgians for accommodation of different types. The questions asked included preferences for separate houses as against apartments, the demand for gardens, ownership or renting, desired relations with neighbours and so on. The statistical results of the inquiry are set out in detail.]

JACQUEMYNS (G.). Vacances et Congrés Payés des Belges. Brussels: Institut Universitaire d'Information Sociale et Économique, 1949. 9". Pp. 64.

[A study by Prof. Jacquemyns of the University of Brussels of how holidays with pay were used in Belgium. About 58% had the means to leave home, of these about 57% spent their holiday in Belgium and 41% went abroad, mostly to France, with Switzerland as second choice. They mostly (63%) were accompanied by their families. They stayed, on average somewhere about ten days, in about half the cases (48%) in a hotel or pension, in about one-third of the cases (31%) with friends or relations. They have a strong preference (78%) for holidays in the summer.]

German.

ALBRECHT (K.). Produktivität als Wirtschafts- und Staatspolitische Aufgabe. Tübingen: J. C. B. Mohr, 1949. 9". Pp. 40. DM 1·50.

[Reviewed in this issue.]

BOLZA (H.). Was sind Zahlungsmittel? Wurzburg: Ferdinand Schöningh, 1948. 8″. Pp. 67.

[To be reviewed.]

EICHBORN (R. VON). Spezialwörterbuch für Handel und Wirtschaft. Deutsch–Englisch. Vol. I. Stuttgart: Deutsche Verlagsanstalt, 1949. Pp. 628.

[This is a new and expanded edition of the German–English part of a Dictionary of commercial, legal and economic words, the English–German part of which was reviewed in the Book Notices in the ECONOMIC JOURNAL for June 1949. Taken together these two volumes make a most valuable addition to dictionaries of the German language. The present volume is remarkably comprehensive for its size. It contains many terms for which there are different words in English and American usage, and these are duly noted with an (E) or an (A) respectively. For the most part the equivalents are well and accurately chosen. The main criticism, though not so serious here as in the English–German part, is that throughout no genders are attached to the nouns in German.]

UHLIG (J.). Handbuch der Weltwirtschaft. Nürnberg: Nest-Verlag, 1949. 7½″. Pp. 354.

[This is a hand-book of useful economic information. For convenience it is set out in alphabetical order, but its main purpose is to provide relevant information about any given problem, partly in statistics, partly in words. One can, to take examples from the " t's," find here the total world production of tobacco and the main sources of supply, the essential objectives of the Taft–Hartley Act, the world total of tanker-shipping tonnage, the world textile balance and the world production of titanium. A very useful little book.]

Italian.

Atti della IX Riunione, Roma 15–16 Aprile 1947. Rome: Società italiana di Demografia e Statistica, 1949. 10″. Pp. xvi + 391. 1,200 l.

[A record of the papers read at the Conference of the Italian Demographic and Statistical Society held at Rome during April 1947. The papers fall into five groups: three papers on sociological problems; fourteen papers on the results of statistical investigations; seven papers on statistical methodology; five papers on demographic statistics; six papers on economic statistics.]

EINAUDI (L.). Lezioni di politica sociale. Turin: Einaudi, 1949. 10″. Pp. xviii + 252.

[During the Second World War, while Prof. Luigi Einaudi, the very distinguished economist who is now President of the Italian State, was living in Switzerland, he was asked to write a short account of the market economy to serve as a basis for instruction to be given to some thousands of Italians who had taken refuge in Switzerland. This account forms the first part of the present volume. The second part consists of lectures on certain matters of social policy such as social insurance, trade-unionism, profit sharing, etc., which was delivered in the spring of 1944 to Italian students under the auspices of the Universities of Geneva and Lausanne. The third part, dealing with equality of opportunity, would have been given in the form of lectures in the University of Geneva during the winter semester of 1944, had it not been for the course taken by the war. The book as a whole is a model of the art of expressing in simple language ideas which, being fundamental, are often inherently difficult.]

INSOLERA (F.). Teorica della capitalizzazione. Turin: Einaudi, 1949. 9½″. Pp. 237.

[A mathematical treatise on the relations between capital and income. While the treatment is mainly from the actuarial point of view, consideration is given to questions of interest to the economist. Discussion of the general theory of capitalisation is followed by applications to banking, insurance and stock-exchange speculation, including option dealing.]

PAPI (G. U.) Préliminaires à l'étude des plans pour l'après guerre. Rome: Institut International d'Agriculture, 1946. 9½". Pp. xv + 306.

[To be reviewed.]

Danish.

HALPERN (J. W.). New Ways for Private Enterprise. Copenhagen: Krohns Bogtrykkeri, 1949. 9". Pp. 24.

[Dr. Halpern sees the major problem of the present as the prevention of inflation in a world (or at any rate a Western European world) which desperately needs the investment of more capital. Voluntary savings are insufficient. A budget surplus, he argues (the validity of this will certainly be questioned), does not effectively withhold purchasing power because it is used for public works. High levels of taxation destroy incentives. What is needed, he argues, is a new escape. He finds it in a "two-fold wages system" A part of wages will be paid not in money but as "capital blocks," also called "creative or capital income." These blocks can be drawn on certain conditions only. All employees are to be encouraged to join study groups to develop the progressive genius of free enterprise and work out new schemes of activity and efficiency. The "capital blocks" will be used, where necessary and desirable, to finance these new activities. It is not quite clear how far Dr. Halpern's solution would, even if acceptable, be effective. So far as it provides a form of forced-saving it clearly contributes to the volume of "waiting." But it is not quite clear whether the drafts on the "capital blocks" are expected ultimately to exhaust the new ear-markings of part of wages. If so will there be any net contribution to other demands for "waiting"?]

ZEUTHEN (F.). Social Sikring. Socialpolitik. Vol. II. Copenhagen: Arnold Busck, 1948. 10". Pp. xiv + 284. Paper Kr. 14.00. Bound Kr. 17.50.

[This book on social security is the second volume of Professor Zeuthen's "Social Policy" (the first, published in 1939, being entitled "Wages and Unemployment"). It is concerned with the need for social action when people suffer a reduction in their standard of living, the remedies and actions taken in Denmark and other countries, other possible systems and experiences and theoretical analysis illuminating the working of the different measures. It is therefore of a somewhere encyclopædic nature, and there is no central analysis or conclusion. Indeed, most of the sections of a few pages into which the chapters are divided can be read separately. As examples of section headings we may name the following: "Insurance versus Relief," "The effectiveness of private insurance," "Health and medical problems," "The duration of benefit payments," "The effect of social insurance premia." The result is an extraordinarily valuable book where an immense number of topics are discussed learnedly and with humanity, and where the social and administrative aspects receive as much attention as the economic.]

Norwegian.

WOLD (K. G.). Levestandardens Økonomi. Oslo: Johan Grundt Tanum, 1949. 9". Pp. 254.

[This book is concerned with the problem of securing a minimum standard of living for the whole population. After an introductory survey of the development of social policy there is a chapter on Means and Ends, where the author indicates that he will take the "economist qua economist" attitude. This is followed by a chapter, "The standard of living in theoretical economics," which, fortunately, begins with Adam Smith and not Aristotle. A lengthy discussion is then given of how to get from technically defined needs to the minimum income requirements of families of different sizes. The points where valuation must enter are clearly indicated, and the whole argument is illustrated by reference to the work of various nutrition experts, social-insurance standards and so on. The various measures of a standard-of-living policy are then surveyed in a two-fold classification as redistributory and discriminatory. The short final chapter concerns their economic effects.]

Swedish.

THUNHOLM (L. F.). Svenskt Kreditväsen. Stockholm: Kooperativa förbundets bokförlag, 1949. Pp. 280.

[This excellent survey of the Swedish credit system, though fairly elementary, is already a standard work. It is clear, thorough and up to date. The first nine chapters describe successively the various banks, the provision of agricultural credit, mortgage finance and the bond market, while the last four chapters deal with the Riksbank and the supply of money, the supply of money and the volume of credit, interest policy and the relationships between public finance and the credit market.]

Swiss.

Probleme der öffentlichen Finanzen und der Währung. Festgabe für Eugen Grossmann. Zurich: Polygraphischer Verlag, 1949. 9½″. Pp. xiv + 317. S. fr. 25.

[To be reviewed.]

Czech.

Czechoslovakia on the Road to Socialism. Prague: Orbis, 1949. 8″. Pp. 193.

[" Czechoslovakia," the Preface declares, " has been definitely and finally freed from the imperialist camp and has become one of the foremost bastions of true democracy and freedom." The purpose of this book is to set forth the progress of Czechoslovakia and the reforms which have been carried through.]

SCHMIDT (O.). Mzdový problem. Prague: Práce, 1946. 8″. Pp. 457. Kčs. 150.

[This is a very useful monograph on wages. The author has approached the subject both from the economic and from the sociological angle and has shown in both fields a detailed knowledge of the relevant literature. After discussing wage theories on classical lines, the author proceeds to examine the theoretical picture thus obtained against the background of political conditions in a capitalist economy. The book suffers from the absence of footnotes relating the author's comments to his sources. A further defect is the absence of an index.]

Official.

BRITISH.

British Transport Commission. Report and Accounts for 1948. London: H.M. Stationery Office, 1949. 9½″. Pp. vii + 424. 7*s*.

[To be reviewed.]

Census of India. Paper No. 4, 1949. Age Tables—Orissa 1941 on Y-Sample. India: Registrar General, 1949. 10½″. Pp. 20.

India. Guide to Current Official Statistics. Vol. III. Delhi: Manager of Publications, 1949. 9½″. Pp. 174. 10*s*.

[This volume covers the official statistics of Public Finance, Education and Health, the Population Census, Labour and Wages, Consumption, various Miscellaneous Items (including Meteorology, Police and Prisons, Elections). Under each head are given the main statistical series and information about definitions and methods of collection.]

Report on an Enquiry into the Family Budgets of Middle Class Employees of the Central Government. Delhi: Manager, Government of India Publications, 1949. 13″. Pp. 314. 8*s*.

[This is a comparative study of family income and expenditure in different regions of India. The range of salaries considered was from as low as Rs. 30 a month to as high as Rs. 500 a month. A sample was drawn from the several hundred thousand salaried employees of the Central Government. Four quarterly budgets were obtained, covering the last quarter of 1945 and the first three of 1946. The total number of finally eligible budgets was just under 6,200. The main results were as follows: total income per family varied from Rs. 159 in Madras to Rs. 286 in Delhi; expenditure was nowhere in reasonable correspondence with income; the monthly expenditure on food varied from Rs. 75 in Madras to Rs. 118 in the Punjab. Rents varied from Rs. 24 in Bombay to Rs. 8 in the U.P. A very large proportion of all families are in debt; the proportions varied from 75% in Calcutta to 37% in the Punjab.]

REPORTS OF THE COMMONWEALTH ECONOMIC COMMITTEE. Thirty-Third Report. A Review of Commonwealth Trade. London: H.M. Stationery Office (Commonwealth Economic Committee), 1949. 9½″. Pp. 53. 1*s*. 6*d*.

[A useful review of the scale and pattern of Commonwealth Trade prepared by the Commonwealth Economic Committee. In 1948 Commonwealth exports were 28·4% of world exports and Commonwealth imports 30·4% of world imports. Of the imports of the Commonwealth 34% came in 1929 from other parts of the Commonwealth; this figure had risen to 41% in 1938 and stood at that level again in 1947. There are useful summaries of production trends, development plans, trade plans and agreements, population changes in addition to a full discussion of the trade problems.]

Review of the Economic Conditions of India with special reference to Foreign Trade in 1948–49. Delhi: Manager of Publications, 1949. 10½″. Pp. 238. 18*s*.

[A roneo-ed report, issued by the Officer of the Economic Adviser to the Government of India. In Section I it provides a full statistical discussion of the general economic conditions of India, of the agricultural situation in regard to all the main crops, and of the situation in all the main industries, followed by some general information about the volume of imports and exports and the balance of trade. Section II gives more detailed information about imports. Section III gives similar information about exports. Section IV analyses the directions of the trade. Section V discusses long-term changes in the pattern and composition of imports and exports and in the balance of trade.]

SWAROOP (SATYA). Census of India, Paper No. 3, 1949. Probable Effect of Decrease in Infantile Mortality on Future Population. India: Registrar General, 1949. 12″. Pp. 16.

[This report links directly with the report of the All India Census for 1941. The infant mortality rate has fallen from about 190 in 1920 to about 150 in 1946. It is estimated that the effects of this fall have been to add about 2·5 million to the population of India by 1941. A continuing decline at the same rate would add 5·5 million by 1951 and 10·3 million by 1961. An additional 25% fall in the rate, reducing it to 94 in 1961, would add about a further 2 million to the population of 1961.]

THE ECONOMIC COOPERATION ADMINISTRATION. Report of the ECA-Commerce Mission to investigate possibilities of increasing Western Europe's dollar earnings. Washington D.C.: The Economic Cooperation Administration, 1949. 9″. Pp. viii + 227.

[To be reviewed.]

AMERICAN.

Hearing before the Joint Committee on the Economic Report Congress of the United States eighty-first congress. Washington: Government Printing Office, 1949. 9″. Pp. 26.

[This contains a record of the examination by the Sub-Committee on Monetary, Credit and Fiscal Policy of the Joint Committee on the Economic Report (of which Senator Paul Douglas is chairman) of the National Planning Association. The latter had presented two memoranda on *Federal Expenditure and Revenue Policy for Economic Stability* and *Fiscal Policy in the Near Future* signed by a group of economists with a wide range of opinions. The signatories were Howard Bowen, Howard Ellis, Kenneth Galbraith, James Hall, Albert Hart, Clarence Heer, E. A. Kincaid, Simeon Loland, Paul Samuelson, Lawrence Seltzer, Arthur Smithies, Tipton Snavely, Christian Sonne, Jacob Viner, Donald Wallace; Sumner Slichter signed the first, but not the second memorandum. The memoranda deserve careful attention. Among the problems discussed was the annual balancing of budgets. The first memorandum says that "to insist upon a balance in every single year is certainly undesirable and to attain it is probably impossible." The signatories doubt whether it is possible "to rely exclusively on fiscal action to offset fluctuations in private business," but urge that "certain automatic devices for bringing remedial forces quickly into play are in a stage where they deserve consideration." As to the immediate future, the group saw no clearly discernible swing, either towards inflation or unemployment, such as might call for a major change in tax rates or expenditures. But it argues that the government should be prepared to act quickly in either eventuality. It makes suggestions for appropriate action in either case.]

International.

INTERNATIONAL LABOUR OFFICE.

The Development of the Co-operative Movement in Asia. Geneva: International Labour Office, 1949. 9½″. Pp. 84. 2*s*. 6*d*.

[A study of recent trends in co-operation and of the means and machinery for co-operative development. The report argues the case for a greater attention by Governments to the possibilities of co-operation, and closer relations between the State and the co-operative organisations.]

International Standard Classification of Occupations. Geneva and London: International Labour Office, 1949. 9½″. Pp. 139. 3*s*. 9*d*.

[This report was prepared for the recent Conference of Labour Statisticians. After discussing the basic problems involved, it provides a proposed international standard classification of occupations and shows how occupational unit groups in the classifications of Canada, France, the United Kingdom and the United States could be made to fit the international classifications.]

Labour Problems in Greece. Geneva and London: International Labour Office, 1949. 9½″. Pp. viii + 381. 10*s*.

[This is the report of a Mission sent to Greece, at the invitation of the Government, by the International Labour Office to study the Greek labour laws and make proposals for their revision. The work of the Mission has covered employment, employment planning, conditions of employment, labour inspections, hours of work, holidays, employment of women and young persons, and social insurance. There is also a full review of the trade-union situation. After discussing the administrative services general conclusions are set out and detailed suggestions made for improvements. While the Mission recognised that thorough-going reform was impossible until the existing emergency was ended, it suggested that much could be done immediately to prepare for these developments.]

Methods of Family Living Studies. Geneva and London: International Labour Office, 1949. 9½″. Pp. 63. 2*s*.

[A report prepared for the International Conference of Labour Statisticians. It covers scope and timing of studies, sampling methods, classification of receipts and disbursements, analysis and appraisal of results, food and dietary analyses, special problems in under-developed territories, and farm and other special surveys. It ends with a series of proposed resolutions covering each of these main issues.]

INTERNATIONAL MONETARY FUND.

Annual Report, April 30, 1949. Washington: International Monetary Fund, 1949. 9″. Pp. 122.

[This annual report covers the period end-April 1948, to end-April 1949. After a general discussion of the international payments problem and of the relative rôle of debtor and creditor countries in restoring a workable system of payments, there are interesting chapters which deal with cross rates, multiple currency practices, exchange restrictions, convertibility, gold policy and subsidies to gold production, monetary reserves and the resources of the Fund.]

UNITED NATIONS.

Demographic Yearbook, 1948. Lake Success: United Nations, 1949. 11½″. Pp. 596. 50*s.*

[To be reviewed.]

DEPARTMENT OF ECONOMIC AFFAIRS. International Capital Movements during the Inter-War Period. Lake Success: United Nations, 1949. 9″. Pp. 70.

[To be reviewed.]

DEPARTMENT OF ECONOMIC AFFAIRS. Maintenance of Full Employment. Lake Success: United Nations (London: Stationery Office), 1949. 9″. Pp. 97. 3*s.* 9*d.*

[This report is based on the replies of governments to a questionnaire sent out by the Economic and Social Council of the United Nations. The questionnaire was designed to elicit information about the full-employment policies of governments, the extent to which governments were committed to such a policy, the technique of policy making, existing unemployment and existing measures for eliminating it, measures—automatic or non-automatic—for preventing the emergence of unemployment, and probable policy in the face of a depression, if one developed. The latter group of questions, covering such issues as the intention to run a budget deficit or to handle balance-of-payments difficulties by particular methods, obviously involve the existence or non-existence of an immutable policy to handle a hypothetical situation. These are exactly the sort of questions to which some governments—and particularly the British Government—find it virtually impossible to give a hard-and-fast answer that would be equally valid for any alternative political party in power. The United Kingdom answers, which like those of six other nations including the United States, are printed in full, are at their best when dealing with the current situation. They are, almost inevitably, least satisfactory when dealing with a hypothetical future in regard to issues not fully covered by the Employment Policy White Paper, which is treated as the exposition of current policy.]

DEPARTMENT OF ECONOMIC AFFAIRS. Steel Division, Economic Commission for Europe. European Steel Trends in the Setting of the World Market. Geneva: United Nations (London: Stationery Office), 1949. 11″. Pp. 148. 11*s.*

[To be reviewed.]

ECONOMIC COMMISSION FOR EUROPE. The European Housing Problem. A preliminary review. Geneva: United Nations, 1949. 13″. Pp. 71 and appendices.

[A roneo-ed survey by the Economic Commission for Europe of the present state of the European housing prôblem. It discusses the general problem facing all countries, and particularly the raw-material shortages. It includes appendices describing the problems and programmes of seventeen different countries, including the United Kingdom. At the end of the war these seventeen countries (Germany is not included) had suffered destruction equal to about 8% of pre-war building wealth (the U.K. figure is estimated at 7·1% and that for France at 7·6%). This has been reduced by about 1 6% by the end of 1947. At that date the equivalent of about 17% of pre-war building wealth was required to raise the level of housing to a reasonable minimum.]

Mission to Haiti. Lake Success: United Nations (London: H.M. Stationery Office), 1949. 9″. Pp. xvii + 327. 17*s.* 6*d.*

[The report of the Mission of Technical Assistance sent by the United Nations to advise the Government of Haiti during 1948. The report ranges over a wide field of topics, including demographic and health problems, education, production, transport, trade, foreign investment and public finance. It provides a very full and detailed account of the Haitian economy. The Mission makes a number of detailed proposals for the raising of the standard of life. It puts the main emphasis on rural development, but stresses that real improvement must depend on the possibility of fostering a spirit of self-help in the people, and the stimulation of co-operative ventures.]

National and International Measures for Full Employment. Lake Success: United Nations (London: H.M. Stationery Office), 1949. 9″. Pp. vi + 104. 5*s*.

[To be reviewed.]

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SOME PROBLEMS IN THE PURE THEORY OF INTERNATIONAL TRADE

I

THE present article discusses certain elaborations and applications of the now familiar and widely used presentation of the theory of comparative cost in terms of opportunity cost. It is largely an essay in welfare economics. I shall, however, not discuss the issue of real or labor cost *vs.* opportunity cost, because it would not serve any useful purpose. For, as Samuelson once said, " the doctrine of opportunity cost, properly stated, in no way contradicts the so-called pain cost theory of value. In fact, when stated with full qualifications, the doctrine of opportunity cost inevitably degenerates into the conditions of general equilibrium." [1] The issue seems to me no longer a live one, and its discussion can therefore be appropriately relegated to a footnote.[2]

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[1] " Welfare Economics and International Trade," *American Economic Review*, Vol. 28, 1938, p. 263.

[2] Ten years later Samuelson seems to have forgotten what he had written in 1938. In June 1948 in the ECONOMIC JOURNAL he said : " Professor Viner has steadfastly maintained the more general equilibrium approach of Walras, Pareto and Marshall against his opponents Knight, Haberler and Robbins. And one by one they have either had to maintain an empirically gratuitous position (that all factors must be perfectly inelastic in total supply and indifferent between different uses) or else have had to reformulate the opportunity cost doctrine so that it becomes not only a rather awkward mumbo-jumbo but loses all novelty and distinctiveness as well " (p. 182).

It could be easily shown that Böhm-Bawerk himself had already in 1894 (see his article " Der letzte Massstab des Güterwertes "—1894, Reprinted in *Gesammette Schriften von Böhm-Bawerk*, ed. F. X. Weiss, Vienna, 1924, especially pp. 428 *et seq.*) extensively, though perhaps not quite satisfactorily in all details, discussed the simplifying assumptions stated in parenthesis above which Samuelson chooses to call a " gratuitous position." These assumptions can, therefore, hardly be characterised as subsequent concessions grudgingly made " one by one."

Viner himself admits that the opportunity-cost approach (in the narrow, unqualified sense) is superior to the real-cost approach " in the case of land use " where " real costs are absent or unimportant " (*Studies*, p. 520). He speaks of a " genuine contribution " of the opportunity-cost technique " to the treatment of land-use costs." Surely, what holds of land also holds of other factors to some extent even of labor (*ibid.*, p. 525). He insists that " the opportunity-cost form

II

As is usual in such discussions, I shall use a two-country, two-commodity approach. One country may stand for the rest of the world, and the external terms of trade will be assumed to be given. This does not mean that what will be said applies only to a country of so negligible a size in the world economy that it literally cannot by its action influence its terms of trade. It only means that the country is supposed to act competitively and that the possibilities of monopolistic doctoring of the terms of trade and oligopolistic or bilateralistic complications will not be discussed in the present paper. Dynamic aspects will also be ignored.

Let us now start with the familiar diagram (Fig. 1) showing a production opportunity curve *AB*, which represents the maximum combinations of *A* and *B* that can be produced. The curve is drawn under the assumption of constant (inelastic) supply of factors of production and of perfect competition in the factor and product markets.[1] The curve is drawn concave towards the origin signifying increasing opportunity cost of *A* in *B* and of *B* in *A*. Assume that in the absence of trade production takes place at point *P*, output (national income) being *Oa* of *A* and *Ob* of *B*. The tangent to the curve at *P* has then a double meaning : Its slope

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of the income approach has no obvious advantage as compared to an outright income approach " (*ibid.*, p. 520).

Now I never regarded the opportunity-cost theory as anything but an " outright " income approach, in fact nothing but a somewhat simplified general equilibrium approach ; and it does not require excessive generosity and tortuous interpretations to see that this is also the attitude of the other (including the original) propounders of the theory. Everybody seems to be agreed, in principle, on which factors have to be taken into consideration as determinants of income or, better, of economic welfare. But not being sufficiently skilful mathematicians, most of us resort to simplifications and allow for factors from which we abstract in our simplified models by means of somewhat vague verbal qualifications. Without pursuing this matter farther, I would still say that the simplifications made in the (unqualified) opportunity-cost approach are empirically much less absurd than those resorted to by any real-cost or pain-cost doctrine, the opportunity-cost approach is more fertile, because it can be readily extended into a general equilibrium system. It is therefore not surprising that the opportunity-cost approach has gained more and more popularity, and that it is used even by those who, in principle, attack it. (See, *e.g.*, Samuelson in the very article from which the passage cited above is taken, and Stolper and Samuelson, " Protection and Real Wages," *Review of Economic Statistics*, 1941.)

[1] The assumption of inelastic factor supply is made for convenience, but is strictly speaking not necessary. How the production-opportunity curve is to be derived from the production functions of the two commodities is shown in W. F. Stolper and P. A. Samuelson, " Protection and Real Wages," *Review of Economic Statistics*, 1941, reprinted in *Readings in the Theory of International Trade*, Philadelphia, 1949. Stolper and Samuelson, too, assume inelastic factor supply. If they did not, they would need two additional dimensions, and their box diagrams would not work.

indicates (1) the exchange ratio between *A* and *B*, one unit of *A* being exchanged for two units of *B* (this is, of course, the reciprocal of the money price ratio and of the ratio of marginal money cost of *A* and *B*) and (2) the marginal transformation ratio: for one unit of *A* that is given up, two units of *B* can be produced.

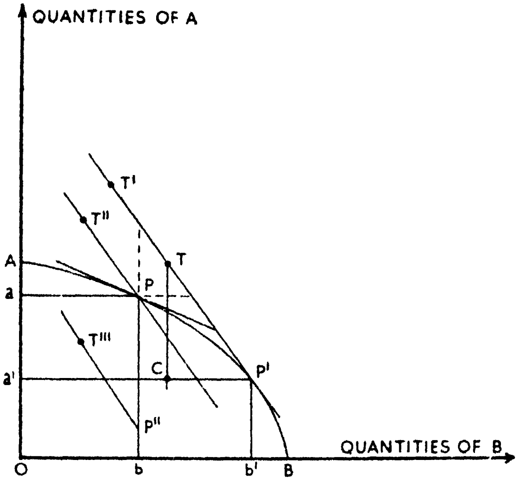

Fig. 1.

It is very important to keep these two meanings apart, for only under special conditions will the two ratios be identical. These conditions are, roughly speaking, competition, indifference of factors with respect to the industry in which they are employed, and absence of external economies and diseconomies. If any one of these two conditions is not fulfilled, the exchange ratio (price ratio) and transformation ratio will diverge from one another and, as we shall see presently, very important welfare consequences flow from this divergence.

Assume now that trade is opened and the international-trade ratio is given by the slope of line *P'T*. That is to say, abroad one *B* buys about two *A*s, while at home one *B* can be exchanged for only half an *A*. Our country will therefore specialise in *B*. Commodity *A*, which is cheap abroad, will be imported, while *B*, which is cheap at home, will be exported. The production point will travel from *P* to *P'*, where the marginal transformation ratio is equal to the new exchange ratio, and by trade the country will then move to, say, *T*, exporting *P'C* of *B* in exchange for *CT* of *A*.

How is the precise location of *T* on the line *TP'* determined? For our purposes it will be sufficient to answer: by demand conditions. Some writers prefer to say that the location of *T* is determined by the point of tangency of the trade line with an indifference curve. It must not be forgotten, however, that a shift in production will usually be accompanied by a redistribution of income. This precludes the uncritical application of community indifference curves, either as an explanatory device (we cannot say " the community " will choose the most preferred point on the trade line, because " the community " does not do any choosing except in a centrally planned economy) or as a criterion of welfare (we cannot simply say any point T on the trade line is " better " than P, on the ground that it obviously lies on a higher indifference curve). Things are not as simple as that. But we shall not pursue this matter any further, and the reader who wishes to think in terms of indifference curves may do so for the purposes of the present paper.[1]

But that point T is " superior," *i.e.*, represents larger " national income " or " economic welfare " than point P, can be established without making use of indifference curves. If T is above and to the right of P, a larger quantity of A and B is available after trade than before, and it is natural to call this a superior position. If T were, as it may well be, above P but to the left of it, say at T', there would be consumed after trade more of A but less of B. In what sense, then, can T' be said to be a " better " position than P? I reject the anthropomorphic argument to the effect that the society could have chosen T, which is superior to P, and since it actually chose T', this, *a fortiori*, must be better than P. This argument is unsatisfactory, at least for an individualistically organised economy. In such an economy what is to be regarded as a better position, a larger national income or superior welfare position must be defined in terms of individual incomes or welfare positions. Modern welfare economics has, however, shown that in the following sense the situation after trade can be said to be better than before: if income were appropriately redistributed, every individual could be made better off than before.[2] It is not necessary that income will actually be redistributed so that everybody will in fact be better off; there will practically always be some individuals who are worse off than before. But it is sufficient that everybody *could* be better off. That is the definition of what is meant by saying that one situation is better and constitutes a larger national income than another.[1]

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[1] T. de Scitovszky, in his article " A Reconsideration of the Theory of Tariffs " (*Review of Economic Studies*, 1942, reprinted in *Readings in the Theory of International Trade*) has made the only serious attempt, as far as I know, at constructing community indifference curves, taking into account changes in the income distribution. His solution of the problem is, however, not entirely satisfactory in my opinion.

[2] See especially Samuelson's formulation in " The Gains from International Trade " (*Canadian Journal of Economics and Political Science*, 1939, reprinted in *Readings in the Theory of International Trade*).

III

What we have stated above is an ideal case which underlies much of the free-trade reasoning. Everybody knows, of course, that it is an idealised case which is never completely realised in actual practice. There are many types of frictions and deviations from the ideal conditions caused by monopolistic and oligopolistic imperfections of the market, external economies and diseconomies, price and wage rigidities, lack of information, irreversibilities of the various curves involved, etc. Each of these conditions *may* operate in such a way as to make certain deviations from the free-trade policy rational on purely economic grounds.[2] But these imperfections may just as well be such as to strengthen the economic case for free trade. A mere enumeration of possible imperfections and deviations from the ideal case does not prove more than the possibility that certain controls might be beneficial (provided of course that they are efficiently administered—which amounts to assuming quite a lot). On this practically all economists agree. In order to prove that the restriction of international trade (rather than the opposite) is justified, it is necessary to show that these imperfections are persistent (in other words that there is not even a tendency for the ideal situation to work itself out) and that they persistently operate in such a direction as to weaken (rather than to strengthen) the case for free trade.[3]

I shall now illustrate this by discussing with the aid of our diagrammatic apparatus a few cases of real and imaginary deviations from the ideal type.

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[1] It should be clearly realised that such a statement necessarily implies a value judgment on the part of the scientist, and in that sense is not entirely objective. But it seems to me that the formula in the text expresses clearly what we have in mind, when we say that trade (under certain assumptions) or something else, say technological advance (again under certain assumptions) increases national income and economic welfare. There are, of course, other alternative or supplementary valuations possible : for example, certain value postulates with respect to inequality of income distribution could be introduced. Moreover, it may be questioned whether a situation in which more goods are available for everybody is under all circumstances to be regarded as a better situation. But we need not go into these questions in the present paper.

[2] The above list is not meant to be a complete catalogue of cases in which a certain amount of control can be justified. For example, protection for the purpose of improving the terms or for changing the income distribution will not be discussed in the present paper.

[3] Thomas Balogh does not betray any awareness of the complexity of these issues, and seems to believe that he has proved something by a loose and inexact enumeration of possible deviations from the competitive ideal. "The Concept of a Dollar Shortage," *The Manchester School*, May 1949, p. 188.

It is often said that perfect mobility of factors within each country is a necessary condition for the ideal classical model. The old classical assumption of international immobility *vs.* national mobility of labor [1] is undoubtedly responsible for this misconception.[2] It can be easily shown, however, that what really causes trouble and may make trade detrimental and justify protection is rigidity of factor prices, which may or may not be associated with immobility of factors.

If perfect mobility of factors between industries were required, the theory of comparative cost would indeed be useless. For it is obvious that land and other natural resources as well as man-made factors of production, such as fixed capital, are in fact immobile locally and occupationally. So is labor to a large degree, at least in the short run. In order to bring the basic principles out quite clearly, let us make the extreme assumption that there is no factor mobility whatsoever. (This assumption is, of course, even more unrealistic than the opposite extreme of perfect mobility. In any real economy there is a large amount of mobility, even if labor is occupationally almost entirely immobile, through the possibility of redirecting intermediate goods such as iron and steel and other materials and fuels, certain types of machinery, transportation services, etc., from one industry to the other.)

Under this highly unrealistic assumption the production opportunity or transformation curve shrinks to the broken line, aPb [3] (Fig. 1). If all factors are in inelastic supply (implying that their prices are perfectly flexible), production will take place at point P. Assume that before trade the exchange ratio between A and B is the same as before, *i.e.*, is given by the slope of the straight line drawn through P. (It is true we cannot now say that it is equal to the marginal rate of transformation, because there is none if there is a kink at P. But we need not discuss here how the exchange rate is determined. If we permit ourselves the use of community indifference curves, we would say that the slope of the indifference curve going through P determines the exchange ratio between A and B.)

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[1] Ohlin makes the same assumption as the early classical writers for his "region." His inter-regional trade is the same as classical international trade, for regions are characterised by internal-factor mobility. See his *Interregional and International Trade.*

[2] See, *e.g.*, Thomas Balogh, *op. cit.* This paper is a convenient and inexhaustible store of fallacies and misconceptions in this field. He says "there must be free internal mobility of factors" (p. 188).

[3] It could be objected that in this case there is, by assumption, no transformation possible. This is quite true; still it is useful to regard the broken line, aPb, as a degenerate transformation curve.

Now assume foreign trade is opened at the rate shown by the trade line TP'. The production point will stay where it was, but the country will import a certain amount of A in exchange for B and move to, say, T''.

T'' is certainly inferior to T or T', and its superiority over P is not so obvious as that of T. Still it can be shown that with trade the country is better off than without in exactly the same sense as in the case of T' : By redistributing income it would be possible to make everybody better off, although in fact the A-producers will be worse off and the B-producers better off than before.[1]

Now let us introduce in addition to immobility of the factors complete rigidity of factor prices. A-producers are, say, organised and their union does not permit any reduction of their members' real wage in the face of falling demand and a lower price of A. In that case, production of A will fall, and some (or all) A-producers will become unemployed. Production will fall to, say, P'', and the trading point may be T''', which is clearly inferior to P. Conversely, if by a tariff or some other protective device the *status quo ante* is restored, the result is a definite improvement. Protection thus may become highly beneficial.[2]

A number of questions remain to be answered. First, how is point P'' determined ? Why is it not higher up or lower down ? We may say that the extent to which production will fall depends on the shape of the marginal-cost curve. Production will fall to that point where marginal cost has fallen to the price level at which A is being imported. If the production function is homogeneous and all factor prices are rigid, constant costs will prevail and production of A will cease altogether. We need not, however, make such extreme assumptions. If the production function is not homogeneous or if some factor prices are not rigid (the price of land and of fixed capital equipment are likely to fall, in other words, these factors are likely to be in inelastic demand—barring dynamic complications, *e.g.*, expectations that the price change will not last) or if inefficient workers will be dismissed first or if efficiency all around goes up, as is likely to be the case when unemployment rises—in all these cases marginal cost will fall when output is reduced, and P'' will not move all the way down.

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[1] The redistribution of income will, naturally, be much more drastic than in the case of mobility of factors. In fact, it may socially be intolerable.

On the other hand, it is perhaps worth pointing out that the distributional aspect may be absent : Suppose A and B are in joint supply (although without any possibility of changing their proportion). Then it would be impossible to distinguish between A and B-producers.

In terms of indifference curves, it is clear that T'' is superior to P.

[2] If we make, however, the by no means unreasonable assumption that in the meantime wages of the B-producers have become rigid at the new real wage-level, a tariff will not carry us back from T''' to P. While production of A will expand, production of B will shrink, and we shall arrive at a point to the left and probably below P.

A second question is whether T''' is necessarily inferior to P. The answer is no, not necessarily, not even if production of A ceases altogether. Suppose that the international terms of trade are extremely favorable, that is to say, that the trade line is very steep, for example, bT'' (not drawn in the diagram). Then it would be possible to reach T'' or a still more favorable point beyond T'' on the line bT''. This is really obvious : If any commodity can be obtained from abroad almost without cost, it would be better to discontinue production altogether, even though it involves a lot of unemployment.[1]

What we have proved is the *possibility* of an unfavorable outcome, not its necessity. This possibility is, naturally, the greater the lower the production point (*i.e.*, the greater unemployment) and the less favorable (*i.e.*, the less steep) the trade line.

A third question concerns the implied change from the assumption of inelastic to that of perfectly elastic factor supply. For absolute rigidity of factor prices is equivalent to perfect elasticity of factor supply, while previously we assumed (for simplicity) inelastic factor supply.

Two kinds of supply curves of labor must be carefully distinguished : (*a*) The supply curve of the individual worker reflecting his subjective preferences for work (or income) as against leisure, and the market supply obtained by adding all individual supply curves; (*b*) the market supply curve as determined by union policy (or minimum-wage legislation or some other collective regulation). I suggest that failure to distinguish between these two meanings of labor supply has confused the discussion about voluntary *vs.* involuntary unemployment. What is really meant by involuntary unemployment is an excess of supply in sense (*a*) over actual demand, more people wishing to work at the current wage than can be employed. This is quite compatible with supply in sense (*b*) being equal to demand.[1]

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[1] Of course, under the extreme assumption made with respect to complete factor immobility, it would be still better to let production of A continue *and* to import additional amounts. But that would require either flexibility of wage-rates of A-workers or an arrangement by which some of the gains made by B-producers through cheap imports of A can be transferred to the A-producers so as to maintain their real wage.

There would be complications from the point of view of the welfare interpretation, if contrary to our assumption the supply curve in the sense (*a*), *i.e.*, the subjective, individual supply curve of labor, were not inelastic. Although it is impossibly unrealistic, let us assume that labor supply in that sense is entirely elastic. (Assume, for example, that people have income from other sources and don't care for work below a certain wage-level.) In that case the resulting unemployment would have to be called voluntary. Point T''' need then not be called inferior to P. If namely, economic welfare is then defined not only in terms of products A and B, but also interpreted to make allowance for "irksomeness" of labor, the reduction in commodity supply implied by T''' as compared with P would be offset by more leisure.[2]

IV

We have proved for the extreme case of factor immobility and factor-price rigidity that trade may be very detrimental. It should be observed that no adverse multiplier effects depending upon a temporary excess of imports over exports are involved. The balance of payments is in equilibrium all the time. The detrimental effect of trade, the failure to reach an optimum, is entirely due to the fact that a static optimum condition is not fulfilled: the equality between the price ratio and the marginal substitution ratio is not preserved.[1] The exchange ratio (reciprocal of money–price ratio) is given by the slope of $P''T'''$, while the ratio of marginal transformation is given by the slope of *Pb* (as was explained above, *aPb* can be regarded as a degenerate transformation curve). Thus, because the price mechanism does not function properly, the price line cuts the transformation curve instead of being tangential to it.[2]

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[1] We may put the distinction in the following way: from the point of view of the preference of the individual workers, that is to say, from the welfare standpoint, unemployment is involuntary; but from the point of view of the union it is voluntary, because the union voluntarily withholds labor supply at a lower wage. This does, however, not necessarily mean that the unions act against the wish of their members, not even of their unemployed members.

I think that our construction is in accord with, in fact gives life to, Prof. T. Haavelmo's forbiddingly abstract scheme: "The Notion of Involuntary Economic Decisions" (*Econometrica*, Vol. 18, No. 1, January 1950, pp. 1 *et seq.*). Haavelmo is troubled, as any theorist who values precision and clarity may well be, by the problem of how to interpret and to reconcile with accepted theoretical notions the concept of "involuntary" decisions and "involuntary" unemployment. He reaches the sensible conclusion that "the concept of involuntary decisions is related to the comparison of alternative economic systems, and not to the decisions within a given system" (*loc. cit.*, p. 2).

Applied to our case we would have to say, that in a system not characterised by wage rigidities employment would be larger, and the difference in the amount of unemployment between the two systems is "involuntary unemployment."

[2] It is a terminological question whether in this case we should distinguish between national income and economic welfare, the former being defined in terms of products only, while the latter makes also allowance for disutility of labor and similar factors. It may be also observed that the case takes on another complexion, if labor supply becomes very elastic (as is likely to be the case) at a very low wage-level. It then would sound rather artificial, if not callous, to say that those workers who do not care for work at a very low wage "don't care" for work and "prefer leisure." But we cannot pursue this matter at this point.

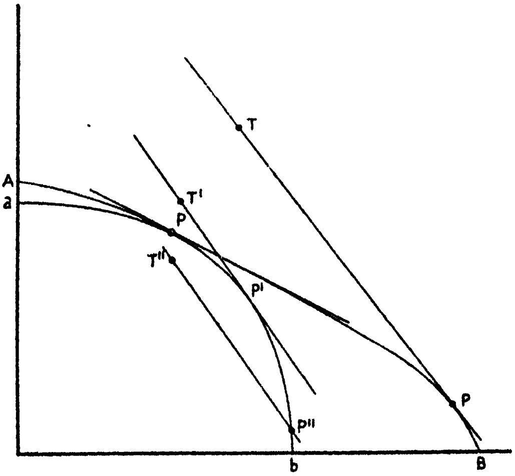

FIG. 2.

It will be instructive to apply now the argument to a less extreme case in which only some, not all, factors are immobile and only some factor prices are rigid.

In Fig. 2, we compare three cases, *T*, *T'* and *T''*. We have two transformation curves. The outer one *APB* is drawn under the assumption that most factors can be shifted and that the price system functions competitively. It thus portrays the "ideal" case. If *P* is the situation before trade, the country moves by production from *P* to *p*, and from there by trade to *T*.

Now let us start from the same initial position *P*, but assume that a number of factors are immobile. The reason for the immobility may be technological or unwillingness to move. Then we get a more sharply curved transformation line, *aPb*, inside *APB*. This curve might well be regarded as a short-run curve, inasmuch as in the short run factor mobility is in all probability much less than in the long run. We assume, however, that factor prices are still in inelastic supply, and that competition prevails, all prices including wages being perfectly flexible.

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[1] This is an optimum condition, because we assumed, for simplicity, the terms of trade as given. If that assumption were dropped we would have to substitute for the international price ratio what might be called the "marginal terms of trade."

[2] We may also say the ratio of private marginal cost, which determines, and is equal to, the price ratio (since the commodity markets are assumed to be competitive), does not reflect the social ratio of marginal substitution.

This case is then, in principle, no different from the preceding one. The country will move by production from *P* to *p′*, and from there to *T′* by trade. *T′* is inferior to *T*, but superior to *P*. The inferiority of *T′* compared with *T* is due to the fact that owing to the reduced mobility of factors or, in other words, due to the lower adaptability of production, the output of *B* cannot be expanded so much as previously when the output of *A* is reduced. It should be also observed that when the production of *A* contracts, it is quite likely that certain factors of production will become idle; but only after their prices (imputed value) have fallen to zero. Suppose *A* is wheat growing, then marginal pieces of land will be abandoned. (On the other hand, in the *B* industry extra marginal factors may be drawn into employment.) The existence of unused free goods, extra marginal land, machinery, buildings, mineral deposits or even labor does, however, not constitute unemployment, although its emergence may constitute extreme hardship for the owners of the factors which have become worthless. The hardship is, of course, especially conspicuous in the case of labor, but is not necessarily confined to it. In the case of labor there is the further complication that its supply is surely not inelastic at low wages. Therefore labor will become unemployed long before its price has fallen to zero. But we come to this point presently.

The third case is distinguished from the second by the fact that in addition to immobility we assume price rigidity for some factors. We ought, then, to draw a third transformation curve more sharply curved than, and inside, the second one. But for simplicity I use the curve *aPb* again. It, thus, illustrates two alternative cases.

If the price mechanism does not work competitively, if certain factors used in the production of *A* cannot shift to industry *B and* refuse to accept a price cut, but choose to become unemployed, the price line will cease to be tangent to the transformation curve. The country will move by production from *P* to (say) *p″*, and by trade from *p″* to, say, *T″*.

T″ is inferior to *P*, and trade is therefore detrimental. What was said in the preceding section concerning the precise location of p'' and the possibility of T'' being superior to P applies also to the present case.

Why the two cases (the case of mere immobility and the case of price rigidity) lead to different results can be explained as follows. In the " ideal " case we have the following equilibrium conditions : the money prices of *A* and of *B* are equal to their respective marginal cost. Each factor is remunerated according to its marginal productivity, and all factors that are willing and able to move receive the same remuneration in both industries.

Now suppose that output of *A* is reduced by one unit. A marginal cost's worth of factors is thereby set free. But these factors produce the same value in industry *B*. It follows that the price ratio is equal to the marginal rate of transformation.[1] No factor released from industry *A* becomes unemployed unless its price has fallen to zero, *i.e.*, unless its marginal productivity has vanished. Hence the existence or emergence of unutilised extra-marginal factors does not affect the equality of the price and substitution ratio.

In the other case where some factor prices are rigid, factors become unemployed before their price has fallen to zero. Hence, when the production of *A* is curtailed by one unit, the production of *B* is expanded by less than the corresponding value because some of the factors go into unemployment rather than into employment in *B*. Therefore, the price ratio is not equal to the marginal rate of transformation. Expressed differently, the ratio of private marginal cost of *A* and *B* does not reflect the social ratio of marginal substitution, or, shorter, private and social cost deviate from one another.[2]

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[1] This is, of course, true only if, as we assumed, the wage of those factors which can move is the same in both industries. Suppose factors can move freely, but that there exists a definite wage differential, wage-rates in one industry being, say, 20% higher than in the other; then the price ratio would not be equal to the marginal ratio of substitution. This is true whatever the cause for the existence of the wage differential. The welfare implications are, however, different according as to whether the wage differential is based : (*a*) on preferences of the workers (*e.g.*, the one type of work being more disagreeable than the other) or (*b*) on an arbitrary regulation. (See Viner's critique of Mihail Manoilesco's " The Theory of Protection and International Trade " in *Journal of Political Economy*, 1932, p. 121, and my *Theory of International Trade*, p. 197. This case could be analysed with the help of our diagrammatic apparatus. In fact Fig. 3 below could be used without any change to portray this case.

[2] In Pigou's terminology : Private and social marginal net product do not coincide.

The reader should remember that we have assumed inelastic supply of labor as far as the individual workers are concerned (as distinguished from the market supply as determined by collective action). This implies that our welfare scheme

We have established the possibility (though not necessity) of detrimental effects of trade in case of rigid prices and of beneficial effects of protection in the case of unemployment. It should be remembered that unfavorable multiplier reactions are excluded and changes on the income distribution ignored.

How important is the case here analysed? Is it a theoretical curiosum or a matter of practical importance?

It is dangerous to jump from such an abstract model to practical application, and there is room in an article not even for a sketch of how to fill the gap. Still I venture to say that, at least in the short run, it is a matter of serious practical concern. However, even in the short run certain qualifications would have to be made, protection would not be more than a *pis aller* and rational policy should not be concerned entirely with short-term considerations. But we cannot pursue these thoughts any farther at this point.

V

In this section two other cases will be briefly analysed which give rise to a deviation of price ratio from the marginal rate of transformation. Unemployment is not involved in either case.

The first case is the much-discussed case of external economies or diseconomies.[1] It is usually thought to be connected with the

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includes only alternative product cost and ignores other elements, *e.g.*, possible differences in the "irksomeness of labor" in the two lines of employment. In other words, economic welfare (national income) is defined in terms of products A and B only. We could, of course, introduce in addition to that disutility of labor. If the rigidity of factor prices, *i.e.*, elasticity of factor supply, were due to individual preference rather than to collective regulation, that is to say, if individuals preferred to go idle rather than to work below a certain wage, case 3 (T'') would not involve a welfare loss as compared with case 2 (T'), because the loss in terms of product would be voluntary: a certain amount of product would be voluntarily foregone in exchange either for more leisure or in order to avoid subjective or material cost of working.

To avoid misunderstanding, it should be emphasised that this construction does not neglect or minimise the hardship imposed on the owners of the factors whose income has fallen. These hardships may be severe, they may be socially intolerable. Compare what was said above concerning the neglect of income redistribution in the global welfare calculation. It is, of course, always possible to introduce additional value postulates concerning income distribution.

[1] The literature is fairly voluminous. See especially the famous controversy between F. P. Graham and F. H. Knight. Graham, "Some Aspects of Protection Further Considered" (*Quarterly Journal of Economics*, Vol. 37, 1923, p. 199 *et seq.*); Knight, "Some Fallacies in the Interpretation of Social Cost" (*ibid.*, Vol. 38, 1924, p. 582; Reply and Rejoinder, *ibid.*, Vol. 39). J. Viner has an illuminating review of the whole issue in his *Studies* (pp. 475–81). J. Tinbergen, *International Economic Co-operation* (Amsterdam–New York, 1945) devotes Appendix I,

case of decreasing cost. Decreasing cost may be due to external economies. The assumption of external economies is, then, a way of making decreasing cost compatible with competition.

External economies (or diseconomies for that matter) need, however, not be associated with decreasing cost. Social as well as private costs may be increasing, and the underlying situation may therefore be quite stable and still there may be a deviation between social and private cost due to external economies or diseconomies, *i.e.*, due to certain cost-raising or cost-reducing factors which would come into play if one industry expanded and the other contracted—factors which for some reason or other are not, or not sufficiently, allowed for in private cost calculations.

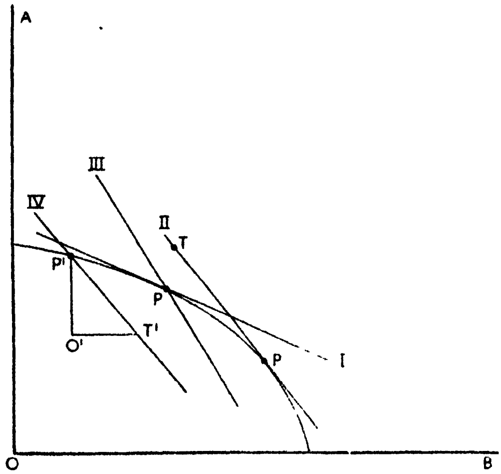

FIG. 3.

This situation is depicted in Fig. 3. Production initially takes place at *P*. The true, social ratio of transformation is given by the slope of the transformation curve (line I). The international exchange ratio (again for simplicity assumed to be fixed) is given by the slope of line II. Commodity *A* being cheaper abroad ought to be imported in exchange for *B*. The country should move to *p* by production, and thence to (say) *T* by trade.

But now we assume that the ratio of private marginal cost of *A* and *B* and hence the domestic price ratio does not correspond to the true social-transformation ratio. Suppose it is given by

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"Professor Graham's Case for Protection" (pp. 182–99) to a penetrating diagrammatic analysis of the subject.

On the broader issues about external and internal economies, private *vs.* social cost, the *locus classicus* is still Marshall's *Principles* and *Industry and Trade* and Pigou's *Economics of Welfare.*

the slope of line III. The exchange ratio overvalues B and undervalues A. This is due to external economies which could be realised and would lower the cost of production of B, if the B industry were expanded. These economies are, however, not recognised by B producers or for some other reasons fail to induce them to expand production.[1]

If the discrepancy between private and social cost is as large as assumed in Fig. 3, the country will show a comparative price advantage in the " wrong " commodity. According to line III, B is cheaper abroad. Hence B will be imported and A exported. The production point will move to the left, to say p', where the ratio of private marginal cost (slope of line IV) becomes equal to the international price ratio (slope of line II). $p'o'$ of A is exported and $o'T'$ imported. The new trading point, T', is inferior to P. This is, I believe, a correct representation of what Graham really meant.[2, 3]

It is one thing, however, and an easy one at that, to point out the possible consequences of a divergence of private and social cost and to cite instances in which such a divergence is likely to arise. It is an entirely different and infinitely more difficult task first to demonstrate that such discrepancies do in fact occur frequently, persistently and on a large scale and to indicate concretely how these cases can be recognised and evaluated.

Most economists who have given serious thought to these problems have reached the conclusion that roughly, and as a rule, the ratios of private money costs do reflect the true social real cost ratios. Practically all economists recognise that there are exceptions to the rule, but they would insist that the burden of proof is on those who maintain that the exceptions are numerous, persistent, large, and, last but not least, practically recognisable and calculable.[1]

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[1] There is not enough space here for a thorough discussion of why this may be so. But let me say that it would be gratuitous simply to assume ignorance. The reason may be that investments would have to be made the fruits of which cannot be appropriated by private individuals (*e.g.*, investment in the skill of the working population). On that point the literature mentioned above should be consulted.

It may be also noted, in parenthesis, that the existence of external economies involves a misallocation of resources in the absence of international trade. P would not be the optimum point. If I may be allowed to use briefly and inexactly community indifference curves, this could be demonstrated by pointing out that P is determined by the condition that an indifference line be tangent to line III, while the optimum point would be located at that point where an indifference curve is tangent to the transformation curve, that is somewhere to the right of P.

[2] If the discrepancy between the social and the private cost ratio is less extreme, *i.e.*, if line III is steeper than line I, but less steep than line II, the country would specialise in the " right " direction but not sufficiently. It would after trade be better off than before, but it would not reach the optimum point T. In that case an export or import subsidy (rather than a tariff) would be indicated.

[3] It is not, however, a literal rendering of what Graham said. Such a literal interpretation is not attempted. It presents considerable difficulties, because Graham was not too clear and seems to have changed his position in the course of the controversy. Cf. the literature quoted above, especially Viner and Tinbergen.

The theory of external economies is related to the reasoning underlying the infant-industry argument for protection, but the two are not identical.[2] The essence of the latter can, I think, be described with the help of our diagrammatic apparatus, as shown in Fig. 4. We start this time with a situation where trade takes place, the production point being P, the trading point T. Suppose now that by means of an import tariff on A, production is shifted from P to P' and the new trading point is at T'.[3] The new situation is inferior to T, which represents the fact that, with the assumptions made, protection is necessarily detrimental.[1]

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[1] We may again turn to Dr. Balogh's convenient store of all sorts of confusions to find an exception which proves the rule. He says: "It is wholly illicit to assume that *money prices* are proportionate to *long run social real costs*. We know that private money costs are not proportionate to social real costs, and neither are prices proportionate to private money costs" (*loc. cit.*, pp. 189 and 190. Italics in original). Dr. Balogh is, of course, unable to give any proof; he just asserts and states impressions. I would not blame him for that, because such a statement as his could, in the nature of the case, not be proved within the frame of a few articles. But he accuses me of "invoicing high authorities instead of proving" my contention that there is a rough correspondence between relative prices and real social cost. He seems to be not aware of the fact that the "high authorities," in fact practically all leading economists who have dealt with these matters, have, if not "proved" (such a theorem cannot be neatly proved like an arithmetical proposition), given plenty of reasons for accepting the contended proposition. They all treat deviations between private and social costs as exceptions to the rule of correspondence. This is, however, perfectly compatible with many shades of opinion about the relative importance or unimportance of these exceptions. Every leading economist who has dealt with these questions can be adduced (J. S. Mill, Marshall, Pigou, Taussig, Knight, Viner, etc.). Even Friedrich List could be read by Dr. Balogh with considerable profit. List was of the opinion that a manufacturing industry that cannot be kept alive on 20–30% tariff can be regarded as unsuited for the country concerned. (*Das Nationale System der Politischen Ökonomie*, Edition Berliner, 1930, p. 326.) Protection of 20–30% *ad valorem* has to be regarded as very moderate nowadays.

Dr. Balogh makes a lot of special risks attaching to foreign trade as an argument for protection and discrimination. It is true that the ultra-protectionist and chauvinistic economic policies advocated by Dr. Balogh which most countries have been now pursuing for many years (without waiting for Dr. Balogh's recommendations) have enormously increased the risk of investment abroad and at home for the purpose of building up export industries. But surely this fact cuts the other way than Dr. Balogh thinks. It increases the importance of expanding rather than of restricting international trade.

[2] On that I agree now with Viner (*Studies*, p. 482), while in my *Theory of International Trade* I held that Graham's case was but a variant of the infant-industry argument for protection. However, in view of the vagueness which attaches to much of the discussion and in view of the fact that different shades of each theory can be found, there would be not much point in a historical investigation about the closeness of their interrelation.

[3] The international terms are again assumed to be fixed. But that is not essential for the argument. The domestic terms of trade (internal price ratio

The essence of the infant-industry argument is that a movement on the transformation curve will bring about an irreversible shift of the curve itself. Concretely, if the A-industry is protected and expands, methods of production will gradually be perfected, skills will be acquired, and so the short-run curve AB will assume the long-run shape $A'B$. The production point will shift to P''. In the new situation trade may or may not take place, and the country may export either A or B, *i.e.*, the trading point may be on either side of P'' depending upon " demand conditions."[2]

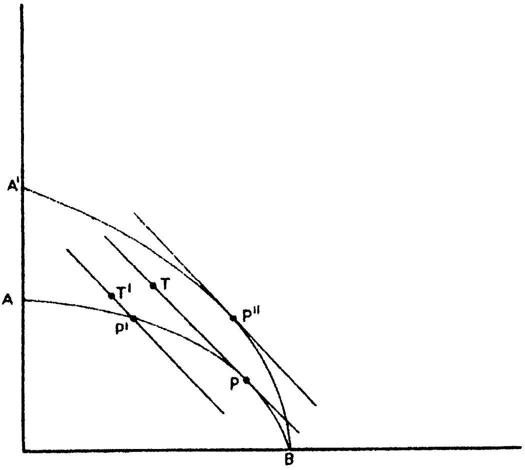

FIG. 4.

Again, it is an easy thing to state the assumptions, to derive the conclusions and to recognise that in principle the possibility must not be ignored that deliberate movements on the production-opportunity curve may shift the curve itself. But it should also be remembered that, in principle, the shifts may be in either direction; there may be external diseconomies as well as economies,

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including the tariff) is equal to the slope of the transformation curve at P', and the height of the tariff is given by the difference between the slope of the transformation curve and the slope of the trading line.

[1] If we drop the assumption that foreign demand is infinitely elastic and assume instead that the terms of trade for the protected country improve, protection may be beneficial. This would be shown in our diagram by making the trading line steeper (not shown in the diagram). If it becomes sufficiently steep, T' may reach a position superior to T. In fact, as is well known, it can be shown that unless foreign demand is infinitely elastic there is always some tariff which makes T' superior to T.

[2] In terms of indifference curves: depending upon whether an indifference curve is tangent to the trading line at P'' or to the left or right of it.

and the possibility of favorable shifts in production-opportunity curve is not confined to import commodities. Improvements may just as well be realisable in the export industries, in which case the opposite of a trade restriction would be indicated. In other words, the argument may cut either way, and it is a little suspicious that the argument is practically always used in one direction, that is to say for the justification of protection rather than of freer trade.

To go beyond the statement of possibilities, to generalise about the overall importance of the infant-industry effect, and to evaluate it in concrete cases is an extremely difficult task which requires not only theoretical acumen, but intimate empirical knowledge of industrial development and, above all, historical perspective. Most leading economists, beginning from J. S. Mill, Marshall, Taussig to Pigou and Viner, accept the principles. But those who made empirical studies, like Marshall and Taussig, became in the course of their studies somewhat sceptical with respect to the scope of the principle, and even more so concerning the chances of a rational application. It is to be hoped that the rapidly growing literature on the problem of developing under-developed countries will eventually add to our knowledge of these matters. But that is beyond the scope of the present paper.

GOTTFRIED HABERLER

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UNREQUITED IMPORTS

THIS paper is a theoretical one. It is concerned with the balance of trade between one country and the rest of the world considered as a single unit. The more special problem, which arises when a surplus of exports to one part of the world *cannot*, for one or another reason, be used to finance a surplus of imports from another part, or *will not* be so used because of a decision to pay off capital debts owing to that part, will not be discussed. Our theme has to do with what happens to a region B, hitherto receiving some imports without the need of paying for them with exports from another region A, when these unrequited imports have to be eliminated. Evidently equilibrium can be restored only through a reduction in aggregate imports or an expansion in exports or some combination of the two. I shall begin by inquiring how the parts played in the adjustment by shifts in imports and shifts in exports will be determined if private interest is allowed to act freely without government intervention; and shall afterwards ask in what circumstances such intervention may be inflicted to make things "better." I assume that, if there is no intervention, *in the end* wage-rates and so on will so adjust themselves as to make the levels of employment in both regions the same after the cut in unrequited imports as before.

I

For simplicity of exposition, as well as because an arrangement in which there are no unrequited imports is in a sense the "natural" one, I shall conduct this inquiry, so to speak, in reverse; starting with a situation in which there are no unrequited imports and asking what will happen if a regular annual flow of such imports is introduced. Obviously no difference to our conclusions can be made by adopting this procedure. We suppose then that region A, making A units of cloth, initially sends away x units in purchase from B, which makes B units of linen, of y units of that. Presently A comes to send r units of cloth as unrequited exports, which constitute, of course, unrequited imports to B. As a result of this, A will have less of its own goods for use at home, and so will, in general, not be willing to send so many of them as before to B in purchase of linen there. Thus its total exports to B will be increased, not by r, but by $(r - k)$, where k is positive. It will now send abroad

$(x + r - k)$ units of cloth instead of the original x units. In like manner B will now have available more foreign goods than before, and so, in general, will not be willing to send away so many of its own goods to buy foreign goods. Its exports, therefore, will, in general, be cut down by some positive quantity h. It will send $(y - h)$ units of linen instead of the original y units. We want to know how the relation between $\frac{r-k}{x}$ and $\frac{h}{y}$ is determined; and, though this is of less interest, how that between $\frac{r-k}{x}$ and $\frac{k}{x}$ is determined. We are also interested in what happens to the terms of trade, that is to say, the price in the market of a unit of B's linen in terms of A's cloth. The change in this proportion is

$$\left\{\frac{x-k}{y-h} - \frac{x}{y}\right\} \div \frac{x}{y} = \frac{-ky + hx}{(y-h)y}.$$

If we choose units so as to make x and y equal, this becomes $\frac{h-k}{x-h}$: which approximates, when h is small, to $\frac{h-k}{x}$.[1]

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[1] At first sight it might be thought that these questions could be handled satisfactorily by the sort of method which is appropriate in analysing the effects of a subsidy of so much per unit on some article, such as tea, on which only a small part of a country's income is spent. That method consists, in effect, in setting up a demand curve and a supply curve, supposing the latter to be moved up in the degree measured by the rate of tax, and finding out what that implies. If we suppose the curves to be straight lines, or the movement which takes place to be so small that, over the relevant range, they may be regarded as approximately straight, the solution is very simple. With the elasticities of demand and supply in respect of the initial point of intersection of the curves written η (negative) and e (positive), when a subsidy at rate s per unit is given, it is easy to show that the price of tea will fall by $\frac{e}{e-\eta}s$: that is to say, the proportionate change in price, which we may call $\frac{\Delta p}{p}$, will be equal to $-\frac{e}{e-\eta}\cdot\frac{s}{p}$; which is necessarily negative. It follows that the proportionate change in the quantity of tea bought $= -\frac{e\eta}{e-\eta}\cdot\frac{s}{p}$; which is necessarily positive; and the proportionate change in expenditure upon tea $= -\frac{e(1+\eta)}{e-\eta}\cdot\frac{s}{p}$; which is positive or negative according as $-\eta >$ or < 1. Thus the proportionate change in the money that sellers of tea "import" divided by the proportionate change in their "exports" is $\frac{1+\eta}{\eta}$.

For our purpose, however, this method of analysis is not applicable. It tacitly assumes that the marginal utility of money that tea-sellers "import" is constant for both tea-buyers and tea-sellers, irrespective of how much tea, within the relevant range, is bought or sold. That cannot properly be assumed except in a special case; and therefore, even aside from the fact that the effects of a subsidy of so much per unit and of a lump-sum grant are quite different, our problem cannot be tackled along these lines.

II

In respect of the initial situation, in which there are no unrequited imports, write $\phi(A - x)$ for A's marginal desire—more strictly, for the marginal desire of a representative man in A—for cloth; $f(y)$ for A's marginal desire for linen; $\psi(B - y)$ for B's marginal desire for linen; and $F(x)$ for B's marginal desire for cloth. If anybody objects to a curve of marginal desire he may imagine that A and B each have currencies so arranged that the marginal utility of money in each is constant, and may make ϕ and f A's demand prices in A money and ψ and F B's demand prices in B money. Obviously it is immaterial which of these two conventions we make use of.[1]

In either case we have intially as a condition of equilibrium

$$\frac{\phi(A - x)}{f(y)} = \frac{F(x)}{\psi(B - y)} \quad . \quad . \quad . \quad . \quad . \quad \text{(I)}$$

In the subsequent situation, where r unrequited imports are being received by B, B's exports become $(y - h)$ and his requited imports $(x - k)$. Then

$$\frac{\phi(A - x - r + k)}{f(y - h)} = \frac{F(x + r - k)}{\psi(B - y + h)} \quad . \quad . \quad . \quad \text{(II)}$$

To make the analysis manageable we must assume that r, k and h are sufficiently small relatively to x and y to allow of products and second powers being ignored. Mere smallness would not, indeed, suffice for this if the second differential of any of our functions was enormous. But that is a freak case implying a violently kinked curve. For practical purposes smallness does suffice. Of course, " small " is a relative term. I suggest, however, that, when the unrequited imports that are to be provided do not exceed 10% or 15% of B's aggregate imports, the results which we shall reach on the above assumption constitute reasonable approximation to the truth; but that, should the unrequited imports comprise as much as, say, 50% of B's aggregate imports, these results might well contain large errors and ought not be relied on.

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[1] It is commonly supposed that, for demand-and-supply analysis, there is no need for the notion of " utility " in the sense of desiredness. In fact, however, in a large part of that analysis there is a suppressed reference to it, namely the assumption that, over the relevant range, the marginal utility of money is constant. It is also of interest to note that no logical basis for the construction of quantity and price-index numbers exists if reference to utility, in its other sense of satisfaction, is barred out.

(a) *The Relation between* (r — k) *and* h

Given the above assumptions about smallness, an easy manipulation of our equations (I) and (II) yields

$$\frac{r-k}{h}=\frac{\dfrac{\psi'}{\psi}+\dfrac{f'}{f}}{\dfrac{\phi'}{\phi}+\dfrac{F'}{F}}, \quad \ldots\ldots \quad \text{(III)}$$

where ϕ stands for $\phi(A-x)$, F for $F(x)$, f for $f(y)$ and ψ for $\psi(B-y)$. Obviously $(r-k)$ is the increase in B's total imports and h the decrease in her total exports consequent upon the provision of r unrequited imports.

Let us now translate the above formula into terms of elasticities, all of which are, of course, negative, in respect of the initial situation. Write η_a and η_b for the elasticities of the desires of A and B respectively for the other's goods; and E_a and E_b for the elasticities of A's desire for A goods and of B's desire for B goods, all in the initial situation. Then formula (III) set out above, translates into

$$\frac{r-k}{h}=\frac{\dfrac{1}{B-y}\cdot\dfrac{1}{E_b}+\dfrac{1}{y}\cdot\dfrac{1}{\eta_a}}{\dfrac{1}{A-x}\cdot\dfrac{1}{E_a}+\dfrac{1}{x}\cdot\dfrac{1}{\eta_b}}. \quad \ldots\ldots \quad \text{(IV)}$$

As a prelude to a more general analysis, let us consider the implications of this formula in two special cases. First, what will happen if the marginal utility of A's goods is unaffected for both regions by any shift, within the relevant range, in dealings between them? This case is analogous to that of a transfer of money gratuitously from buyers to sellers of tea when the marginal utility of money is assumed to be constant for both groups. Both $\frac{1}{E_a}$ and $\frac{1}{\eta_b}$ must be equal to 0; and, consequently, h must be equal to 0. That is to say, B's exports are the same as before. And so, as we shall see presently,[1] are his requited imports.

Secondly, what will happen if the marginal utility of A goods to A is unaffected, within the relevant range, by changes in their amount, and the marginal utility of B goods to B is similarly unaffected? In this case $\frac{1}{E_a}$ and $\frac{1}{E_b}$ are both equal to 0. So our formula reduces to

$$\frac{r-k}{h}=\frac{y}{x}\cdot\frac{\eta_b}{\eta_a}.$$

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[1] Cf. *post*, p. 246.

Choose units so that initially $y = x$. Then

$$\frac{r-k}{h} = \frac{\eta_b}{\eta_a}.$$

That is to say, the increase in B's total imports divided by the decrease in his total exports is equal (numerically) to the elasticity of B's desire for A goods divided by that of A's desire for B goods. The more elastic B's desire relatively to A's reciprocal desire, the larger will be the addition to B's imports relatively to the reduction in his exports.

It is easy to see, in the conditions supposed, that A's desire schedule for B's goods is exactly represented by A's demand schedule for B goods in terms of A goods, and B's desire schedule for A goods by B's demand schedule for A goods in terms of B goods. In short, we have to do with Marshall's well-known reciprocal demand schedules, so that η_a and η_b are the relevant elasticities of reciprocal demand. If we choose to think of B as a supplier instead of as a reciprocal demander, and write e_b for the elasticity of B's supply in respect of y exports, then, since, as is well known,[1] $(e_b + 1) = -\eta_b$, we may write our formula in the alternative form

$$\frac{r-k}{h} = -\frac{e_b + 1}{\eta_a}.$$

Turn now to the more general implications of our formula. It is obvious that, other things being equal, $\frac{r-k}{h}$ is larger the smaller is each of η_a and E_b, and the larger is each of η_b and E_a. It is equally obvious that it is larger, other things being equal, the smaller is B relatively to A. This implies that, if a large country takes to sending unrequited imports to a small one, the reaction on the second country's aggregate imports will tend to predominate over that on its exports, whereas, if a small country takes to sending unrequited imports to a large one, the tendency will be in the opposite direction.

(b) *The Relation between* r *and* k

Up to this point nothing has been said about the relation between the entry into B of r unrequited imports and the associated fall, which we have called k, in requited ones. This relation has now to be considered. Since B's requited imports and her exports must pay for one another, we know that, alike in the initial and in the later situation, the price per unit of B's exports in terms of her imports is equal to her requited imports divided by her exports. This price is also equal to the marginal utility of B's imports divided by the marginal utility of her exports. Hence we have:

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[1] Cf. my *Study in Public Finance*, third edition, pp. 198–9, footnote.

in the initial situation

$$\frac{x}{y} = \frac{F(x)}{\psi(B - y)} \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad \text{(V)}$$

in the subsequent situation

$$\frac{x - k}{y - h} = \frac{F(x + r - k)}{\psi(B - y + h)} \quad . \quad . \quad . \quad . \quad . \quad \text{(VI)}$$

By manipulating these equations in combination with the formula given on p. 244, namely

$$\frac{r - k}{h} = \frac{\dfrac{\psi'}{\psi} + \dfrac{f'}{f}}{\dfrac{\phi'}{\phi} + \dfrac{F'}{F}},$$

we are able to find an expression which relates k to r. Units being so chosen as to make $y = x$,

$$k = r\frac{\left(1 - \dfrac{1}{E_b}\right)\left\{\dfrac{1}{A - x} \cdot \dfrac{1}{E_a} + \dfrac{1}{x} \cdot \dfrac{1}{\eta_b}\right\} - \dfrac{1}{\eta_b}\left\{\dfrac{1}{B - x} \cdot \dfrac{1}{E_b} + \dfrac{1}{x} \cdot \dfrac{1}{\eta_a}\right\}}{\left(1 - \dfrac{1}{E_b}\right)\left\{\dfrac{1}{A - x} \cdot \dfrac{1}{E_a} + \dfrac{1}{x} \cdot \dfrac{1}{\eta_b}\right\} + \left(1 - \dfrac{1}{\eta_b}\right)\left\{\dfrac{1}{B - x} \cdot \dfrac{1}{E_b} + \dfrac{1}{x} \cdot \dfrac{1}{\eta_a}\right\}}. \quad \text{(VII)}$$

In the first special case distinguished on p. 244, where $\frac{1}{E_a}$ and $\frac{1}{\eta_b}$ are both equal to 0, the numerator of this expression becomes $= 0$; and, therefore, so also does k. That this must be so is fairly evident to common sense, because in these conditions the inhabitants of neither region have any different urge in the new situation from what they had in the old to interchange their goods. In the second special case—which we may call the Marshallian case—where the marginal utilities of A goods to A and of B goods to B are both constant over the relevant range, $\frac{1}{E_a}$ and $\frac{1}{E_b}$ are both $= 0$. In this case our formula reduces to

$$k = r\frac{\eta_a - 1}{\eta_a - 1 + \eta_b}.$$

It is then evident that, if $\eta_b = 0$, that is to say, if B's demand in terms of its own goods for foreign goods is absolutely inelastic, $k = r$. This, too, agrees with common sense; B will not want any different quantum of imports, whether it gets some of them free or not. It follows, further, that, the smaller (numerically)

η_b is, the more nearly k approaches to r; and, again, that the smaller (numerically) η_a is, the less nearly k approaches to r; though, even when η_a becomes nil, it will never itself become nil, so long as η_b is finite.

An inspection of our formula (VII) shows that what has been said of the influence of the values of η_b and η_a on the value of k in the Marshallian special case is also true in the general case. In like manner, inspection shows that, the smaller A is relatively to B, the larger, in general, k will be; the more a given volume of unrequited imports will cause requited imports to be cut down. This again fits in with our instinctive expectations. The implications for k of differences in the sizes of E_a and E_b some people might find it troublesome to discover by mere inspection. However, with a little care, it is not difficult to see that, other things being equal, k will be larger, the larger (numerically) is E_b, and the smaller (numerically) is E_a. These results, again, agree with common sense; and they can, of course, if desired, be confirmed by differentiating k in our main expression to $-E_b$ and $-E_a$ respectively.

(c) *The Terms of Trade*

There remains the question how the terms of trade—the quantum of cloth exchanged in the market against a unit of linen—will be affected if A comes to send out r units of cloth as unrequited imports for B. We have seen that, with units so chosen as to make x and y equal, the change in these terms approximates, when h is small, to $\frac{h-k}{x}$. This *may* be negative. That is to say, conditions are conceivable in which for one region to receive goods in the form of unrequited imports from another would cause it to exchange its commercial sendings on *worse* terms. But is it at all likely that this will happen—that America, for example, in consequence of receiving reparations from Germany after the first World War, would have found that the terms of trade turned against her? Our instinct is to say straight off that the receipt of unrequited imports is likely to enable the receiving country to pay *less* per unit for the goods which she still has to buy from the other, to obtain from her better terms of trade over and above getting the unrequited imports for nothing. But the issue is more difficult than it seems to be at first sight.[1]

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[1] The discussion that follows is in line with that developed in my *Study in Public Finance*, third edition, Part II, Chapter 19.

Write p for the price of home goods in B in terms of foreign goods in the initial situation. Then

$$\frac{\phi}{f} = p = \frac{\psi}{f}.$$

In the later situation $\dfrac{\phi(A - x - r + k)}{f(y - h)} = (p + \Delta p) = \dfrac{\psi(B - y - h)}{F(x + r - k)}$.

It follows that Δp is positive, *i.e.*, that B's terms of trade are improved, provided that

$$\frac{(-r + k)\phi'}{hf'} = \frac{-h\psi'}{(r - k)F'} < 1$$

i.e., provided that $\dfrac{\phi' \,.\, \psi'}{f' \,.\, F'} < 1$:

that is, in terms of elasticities, provided that

$$\frac{\dfrac{1}{A - x} \cdot \dfrac{1}{B - y} \cdot \dfrac{1}{E_a} \cdot \dfrac{1}{E_b}}{\dfrac{1}{x} \cdot \dfrac{1}{y} \cdot \dfrac{1}{\eta_a} \cdot \dfrac{1}{\eta_b}} < 1$$

or

$$\frac{xy}{(A - x)(B - y)} \cdot \frac{\eta_a}{E_a} \cdot \frac{\eta_b}{E_b}{}^{1} < 1.$$

Now we know that no country normally exports more than a fairly small fraction of its aggregate output. Hence

$$\frac{xy}{(A - x)(B - y)}$$

cannot be more than a small fraction. Further, in the absence of special knowledge, it is reasonable to suppose that the elasticity of a country's desire for the goods that it makes itself will not differ much from the corresponding elasticity in respect of those that it imports. Hence, in the absence of special knowledge, we may expect that $\dfrac{\eta_a}{E_a} \,.\, \dfrac{\eta_b}{E_b}$ will have a value neighbouring on unity. It follows that

$$\frac{xy}{(A - x)(B - y)} \cdot \frac{\eta_a}{E_a} \cdot \frac{\eta_b}{E_b}$$

will, in general, be substantially less than unity. That is to say, when one region comes to receive unrequited imports from

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[1] It should be noticed that in this discussion E_a corresponds to P_e on p. 184 of *A Study in Public Finance*, not to E_e, and E_b to Q_t not to G_t. There is thus no inconsistency between the two versions.

another, that fact will, in general, enable it to obtain the foreign goods that it continues to buy at lower prices, in terms of foreign goods as against its own goods, than it did before. Thus our instinct turns out to be right. In the special case which I have called the Marshallian case, where the marginal utility derivable from the use of its own products is constant over the relevant range for each of our two regions, the fact that $\frac{1}{E_a}$ and $\frac{1}{E_b}$ are both nil makes

$$\frac{xy}{(A - x)(B - y)} \cdot \frac{\eta_a}{E_a} \cdot \frac{\eta_b}{E_b}$$

necessarily less than unity; so that the terms of trade *must* be turned in favour of the region that has come to receive unrequited imports.

III

At this point it will be convenient to turn the results we have reached round, and set down the consequences that will follow when a flow of unrequited imports, which a country has hitherto been receiving, are cut off. If private interest is allowed free play, the country suffering loss will, in general, react partly by increasing its exports, so as to buy more requited imports, and partly by accepting a reduction in aggregate imports, requited and unrequited together. Its increase in exports will be smaller and the reduction in its aggregate imports larger : (1) the smaller it is relatively to the rest of the world, (2) the less elastic is its desire for its own goods, (3) the more elastic is its desire for foreign goods, (4) the more elastic is the foreign desire for foreign goods and (5) the less elastic is the foreign desire for its goods. Further—in line with what was said in the last paragraph—when unrequited imports hitherto received are no longer forthcoming to any region the price per unit of that region's exports made in requited imports will, in general, be lowered.[1]

IV

Our analysis has, of course, been abstract, the solutions being expressed in formulæ dominated by elasticities whose numerical values we have not attempted to evaluate. We should naturally wish, if we could, to set out the conditions in which the several relevant elasticities are likely in actual life to be respectively small. Obviously a dominant factor is the *kind* of products which the two trading regions have facilities for making. It is well known, for instance, that in the middle of the nineteenth century England was specially adapted for manufacturing machinery, which foreign nations greatly needed, while there were few things produced abroad which she herself greatly needed. Therefore, the desire of foreigners for our goods tended to be inelastic, and our own desire for foreign goods elastic. In more recent times we have come to have strong rivals as regards our chief export goods, and at the same time to be dependent on imports for essential foods and raw materials. Therefore, the foreign desire for our goods should, it would seem, be more elastic and our desire for foreign goods less elastic than it used to be. There is also to be taken into account the fact that, other things being equal, a large area is likely to contain a greater *variety* of materials and skills than a small one. It is, therefore, probable that, if a large area is set over against a small one, it will find a larger proportion of the exports from that area with which it is ready to dispense—*i.e.*, for which it has an elastic desire—than the small area does among the imports from it.[1] Thus, when a small section of the economic world is confronted with a large one, its relative smallness should tend, not directly because of its smallness, but indirectly because of the relation of size to *variety* of output, to make its desire for foreign goods inelastic and the foreign desire for its goods elastic. It must be remembered, however, that, for a country which cannot readily dispense with the main part of its imports, there may, nevertheless, be a good many that do not matter to it much. Hence tendencies to inelasticity of desire for foreign goods in such a country as England might not manifest themselves, so to speak, at the margin, but only if it should happen that the customary volume of imports had been substantially cut down. In any event this kind of concrete application lies off the main route of our analysis.

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[1] It will be understood that the elasticities referred to in this paragraph are elasticities in respect of those quantities of goods that are bought and sold in the conditions that prevail *after* the cut in unrequited imports has taken place. If that were not so, what is said here would not properly cohere with the earlier part of our analysis.

V

Despite the abstract character of that analysis we have obtained, I think, some understanding of the way in which, in various conditions, the economy of a country would react to the elimination of hitherto unrequited imports, if it were left to react "naturally." Will that reaction be "the best" that could be looked for, or may it be hoped that, by overt government action, "nature" could be improved upon? This question has two aspects. First, assuming that the free play of private interest is likely to bring about the best adjustments in the end, could the government improve things by speeding up these adjustments and so preventing incidental damage, for which they might be responsible during the period over which they were being made? Secondly, are the adjustments which the free play of private interest tends to bring about in the end in fact the best; or could the government, by well-directed intervention, bring about something better? Let us begin with the former of these two questions.

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[1] It should be noted, in passing, that for a country not to be ready to dispense with a thing is not the same as for that thing to be "indispensable" in the ordinary meaning of that word. A large rise in the price of champagne might cause only a little to be dispensed with, because those who buy it are mostly rich; but nobody would speak of champagne as indispensable.

Here for the first time we come in contact with money. In order that the adjustments, which, on the withdrawal of unrequited imports, the free play of private interest tends to bring about, may be brought about in fact, it is necessary that relative prices in our two regions and the rate of exchange between their moneys shall be related in a particular way. Since, in general, the price of the home country's imports in terms of exports has to be raised, either money prices in that country must fall relatively to money prices abroad or the value per unit of its money must fall in terms of foreign money. In this sense devaluation is an alternative to deflation; though, in view of the fact that devaluation in one country may induce some parts of the outside world to devalue also, we cannot say how much devaluation will have the same effect as a given degree of deflation. Now deflation inescapably carries with it either a fall in money wage-rates, to which in circumstances such as those now ruling it would be almost impossible to obtain rapid assent, or the creation of unemployment, which might last a long time. Hence the adjustment, for which we look in the end, with employment after the cut in unrequited imports the same as before, would be held up, maybe, for years, throughout the whole of which heavy losses of potential output would be suffered. With good fortune devaluation might enable a deficit country to cut down its coat to fit its cloth without having also to face up to these losses.

There is one other matter closely connected with what has just been said, to which reference should be made. This has to do with bargains about money wage-rates. *Prima facie* a rise in these rates, unless accompanied by a corresponding improvement in productivity, must reduce the number of men that employers here find it worth while to engage, so decrease output, and so raise prices; this rise in prices encouraging imports and discouraging exports, and thus tending to reverse the efforts of the economic system to adjust itself to the loss of its unrequited imports. This process of effects will, however, only happen provided that the first move, a contraction of employment consequent on the rise of wages, takes place; and that *need not* in all circumstances take place. Where competition is perfect and everything is working smoothly, it must, indeed, do so. For employers will be paying their workers a wage equal to the value of the (private) net product of their work; and this value can become higher only if the number of men engaged is less. Where, however, an element of monopoly or imperfect competition is present, or when a monetary inflation has been taking place so rapidly that money wage-rates have not been able to keep up, employers are likely to be paying a money wage something less than the value of the marginal private product of their workers. There is thus a range within which money wage-rates may be pushed up without damaging employment, and so without raising prices. When and where employment is over-full, in the sense that there are unfilled vacancies which employers, if they could find the men, would like to fill, there is presumption that in fact such a range exists; and, the more numerous the unfilled vacancies are, the wider it is likely to be. Thus in present conditions in this country it is probable that some scope exists in some industries for raising wages, even though there is no accompanying improvement in productivity, without prices being forced up.

Passing away from monetary matters—among which money wage-rates may reasonably be classed—let us look for a moment at the short-period problem from another angle. Everybody knows that, for bringing about the transition from a peace to a war economy, the slow-acting mechanism of the market has to be supplemented by compulsion and direct controls. Something, there is little doubt, may usefully be done along these lines in countries confronted with the need for large cuts in hitherto unrequited imports. So far as economic forces point to the need for more exports, the State, by propaganda, the supply of information about markets, training schemes and so on, could lend them a helping hand. So far as they point to the need for lessened imports, and thus for more home output of goods hitherto imported, it can by like means stimulate and quicken the movement of men and equipment into, say, home agriculture. When, as in our own present situation, the cut in unrequited imports that has to be faced is substantial, it would be very foolish for the Government to hold back from trying to help " nature " in such ways as these.

Turn, then, to long-period problems. So far we have provisionally supposed that the free play of private interest tends in the end to bring about those adjustments to a given cut in unrequited imports that in the general interest are " best." But, of course, that need not, and, indeed, is not likely, to be so. The crucial fact is that " natural " adjustments, coming about, as they must, in response to the efforts of private persons, each trying to do the best he can for his individual interest, may not turn out to be such that the best is done for the collective interest of all of them together. The reason for this is that, in pursuing his own interest, a man may set up reactions which are injurious to other people, but do not affect him, and which he is, therefore, very likely to ignore when deciding what to do. For example, if our aggregate imports have to be cut down by so much, in the natural course of events the cut might come to be made in poor men's food, because rich men, on account of their riches, are able to prevent any cut in, say, luxury cars by bidding up their price; and there is obviously social loss in that. Again, apart from differences in wealth among different social classes, there is danger that in the natural course imports of raw materials might be cut down too much relatively to other imports, because the purchasers of these materials do not sufficiently take account of the heavy indirect damage that lack of them may cause by preventing our work-people and equipment from doing the sort of work that they have been adapted to do. Plainly, provided that the government machine is adequate to the task, there is scope for socially useful action in preventing cuts that have to be made from being exercised upon classes of imports the sacrifice of which would be especially injurious.

Moreover, it is not only as regards the choice of imports to be cut down when a given aggregate cut has to be made that individual private interest and the general interest may diverge. The same thing is true of the choice between cutting down aggregate imports and expanding aggregate exports. It may well be in the general interest that the Government, by one or another device—even by export bounties where these were unlikely to provoke "retaliation"—should make exports expand more, and so imports contract less, than they would have done had private interest been allowed free play. This is especially likely to be so if, as with Great Britain, imports are made up chiefly of food and essential raw materials.

In so far as the central and local authorities themselves employ the nation's resources, whether in general administration, in the armed forces, in capital construction or in providing social services, private interest is not, of course, in control, and, therefore, there can be no question of government interference to correct its shortcomings. The authorities have at all times directly to decide for themselves how much resources to use up in these ways. *Prima facie*, when unrequited imports are cut down, they would promote the general interest by making *some* cut in these things, so as to release resources for making exports and thus limit the cut in aggregate imports.

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THE THEORY OF INCREASING UNDER-EMPLOYMENT

I

FROM Adam Smith to the present day, every systematic theory of economic development has implied " stagnation " at some advanced stage of capitalist development. In the majority of these theories there is a tendency towards increasing under-employment in the stagnation phase.[1] Viewed in this light, Alvin Hansen's theory of increasing under-employment is but a restatement, in more Keynesian terms, of ideas that have appeared repeatedly in the literature. Yet Hansen's theory has been the object of a vigorous and persistent counter-attack, even from economists who are not greatly alarmed by the political implications of the thesis. Even to-day, it cannot be said that the theory has won wide acceptance among economists who have not devoted special attention to the theory of economic development. In the view of the present writer, much of the criticism of the theory can be traced to the looseness of the early formulations of the theory, which has led to much misunderstanding and misinterpretation.

The essence of the Hansen theory of economic trends is that in advanced countries, where the rate of population growth and the rate of discovery of new resources are tapering off, and the rate of capital-absorbing innovation is not rapidly increasing, net savings at full employment will tend to grow, while net investment at full employment will tend to fall. Under these conditions there will be a growing gap between the trend of potential income and the trend of actual income. The purpose of this article is to present a simple, concise and formalised version of this theory, and to compare the formal content of the theory with that of other theories of trend developed in recent years.[2] It is not the intention of this paper to prove the thesis right or wrong; such proof must in any case be largely empirical. It is hoped, however, that the formulation presented here will isolate the relevant questions for empirical testing.

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[1] Cf. B. Higgins, " Concepts and Criteria of Secular Stagnation " in *Income, Employment, and Public Policy : Essays in Honour of Alvin Hansen* (New York, 1948); " The Doctrine of Economic Maturity," *American Economic Review*, March 1946; " To Save or Not to Save ? " *Canadian Journal of Economics & Political Science*, February 1948.

[2] Some of the confusion surrounding the theory seems to have arisen merely from the use of the term " stagnation " to describe it. Since the Hansen thesis is perfectly consistent with a rising trend of actual *per capita* income, and even with a rising trend of actual gross investment, it is better described as a " theory of growing deflationary gap," or a " theory of increasing under-employment," than as a theory of " secular stagnation " or " economic maturity." Cf. B. Higgins, "The Concept of Secular Stagnation," *American Economic Review* (forthcoming).

II

The following symbols will be used :—

O_p = potential output; that is, output with full employment and an optimum allocation of resources.
O_a = actual output.
I = net investment.
$\bar{I}$ = net investment at full employment.
I_g = gross investment.
S = net saving.
S_g = gross saving.
t = time.
L = size of the labour force (in man-weeks). For simplicity, we shall assume no change in the ratio of labour force to total population. (L is a function of time, $L(t)$.)
K = supply of known natural resources.
r = rate of interest.
T = level of " technique " (or productivity), defined so that any percentage increase in " T " will raise total output by the same percentage, without any change in quantities of any factors of production employed. (T is a function of time, $T(t)$.)
D = degree of monopoly in the economy as a whole (a weighted average of ratios of price minus marginal cost to price for all firms). (D is a function of time, $D(t)$.)
N = unemployment (in man-weeks).
X_n = potential output per man-week of the unemployed.
p = time-preference.
Q = stock of capital, and is a function of time, $Q(t)$.

Given these definitions,

$$O_p = T \cdot f(L,K,Q) \quad . \quad . \quad . \quad . \quad . \quad (1)$$

f being the production function, and

$$\frac{dO_p}{dt} = T\left(\frac{\partial f}{\partial L}\cdot\frac{dL}{dt} + \frac{\partial f}{\partial K}\cdot\frac{dK}{dt} + \frac{\partial f}{\partial Q}\cdot\frac{dQ}{dt}\right) + \frac{dT}{dt}\cdot f(L,K,Q) \; . \; . \; (1a)$$

$$O_a = O_p - (N \cdot X_n) - M(D) \quad . \quad . \quad . \quad (2)$$

M being a function relating the loss of production through misallocation of resources to the degree of monopoly.

Unless there is a *trend* in the relationship of the productivity of employed workers to the productivity of unemployed workers,

$$X_n = k \,.\, T,$$

where k is a constant expressed in terms of output,[1] and

$$O_a = O_p - (kNT + M(D))$$

Thus

$$\frac{d}{dt}(O_p - O_a) = \frac{kNdT}{dt} + \frac{kTdN}{dt} + \frac{dM}{dD}\cdot\frac{dD}{dt} \quad . \quad . \quad (2a)$$

The Hansen thesis proper does not take into account any trend there may be in the degree of monopoly power. Any growing loss of potential output resulting from increasing misallocation of resources is ignored. We shall therefore ignore the D terms in the balance of this presentation, while recognising that they may in reality be a factor of some importance. With any trend in D eliminated, the main factor in the spread between O_p and O_a will be unemployment, N.

The volume of unemployment will be the product of some " leverage " coefficient, l, and the gap between savings and investment at full employment levels of output or real income, $\bar{S} - \bar{I}$. This leverage coefficient is a complex multiplier, including the Keynesian multiplier, Harrod's " relation " and so forth. Since we are interested in trends, we shall consider l, $\bar{S}$ and $\bar{I}$ as functions of time. Thus

$$N = l[\bar{S}(t) - \bar{I}(t)] \quad . \quad . \quad . \quad . \quad . \quad (3)$$

$$\frac{dN}{dt} = \frac{dl}{dt}[\bar{S}(t) - \bar{I}(t)] + l\left(\frac{d\bar{S}}{dt} - \frac{d\bar{I}}{dt}\right). \quad . \quad . \quad (3a)$$

The trend of unemployment will therefore depend upon the trend in savings and investment at full employment, and on the trend in the leverage coefficient, l.[2] It seems likely that $\frac{dl}{dt}$ is small; as income rises, the marginal propensity to consume and the Keynesian multiplier will tend to fall; but the " relation " will rise as the period of investment is lengthened, and as business men become more " cycle-conscious." The trend in l is therefore unlikely to influence significantly the effects of any inflationary or deflationary gap. As a first approximation, therefore, we shall ignore the expression $\frac{dl}{dt}[\bar{S}(t) - \bar{I}(t)]$, and reduce equation (3*a*) to

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[1] The productivity of labour might be affected by any trend in Q/L or in K/L, but any such trend would affect the productivity of employed workers as well, and would not alter the argument significantly.

[2] It would be a simple matter to translate equation (3) into money terms, making $N = \beta[S(\bar{Y}) - I(\bar{Y})]$, where $\bar{Y}$ is national income at full employment. In this equation the function β will depend not only on l but also on the price level. Since the analysis already has a lot of symbols for a simple argument, it seemed better to confine it to real terms.

$$\frac{dN}{dt} = l\left(\frac{d\bar{S}}{dt} - \frac{d\bar{I}}{dt}\right) \quad . \quad . \quad . \quad . \quad . \quad . \quad (3b)$$

The Trend in Savings

Empirical studies suggest that net savings depend mainly on the level of disposable income, but are also affected in the short run by the level of disposable income in the last cyclical peak.[1] There seems to be a tendency for savings at given levels of income to decline secularly. This downward trend in the propensity-to-save schedule could be explained by increasing amplitude of economic fluctuations in the downward direction; the more incomes fall in the down-swing, the more savings will be squeezed out in the effort to maintain the living standards established in the previous cyclical peak. A trend towards deeper and deeper depressions would in itself bring a growing gap between the trend of potential real income and the trend of actual real income. Thus the downward drift of the *ex post* savings function could be a *product* of increasing under-employment; the downward drift of the *ex post* propensity to save could actually be the result of an upward drift of the *ex ante* propensity to save.

Let us lump together all factors influencing the willingness to save with given levels of income and given interest rates under the heading " time-preference," or p. Since we are interested in seeing how the economic system will operate in the absence of any particular type of fiscal policy, we shall abstract from any trend in the volume of taxation and transfer payments which would affect the ratio of disposable income to net national income at market prices.

Then $S = S\,(O_a, p, r)$ and $\bar{S} = \bar{S}\,(O_p, p, r)$, where $O_p = O_p(t)$, $p = p(t)$, and $r = r(t)$.

$$\therefore \quad \frac{d\bar{S}}{dt} = \frac{\partial\bar{S}}{\partial O_p}\cdot\frac{dO_p}{dt} + \frac{\partial\bar{S}}{\partial p}\cdot\frac{dp}{dt} + \frac{\partial\bar{S}}{\partial r}\cdot\frac{dr}{dt}$$

$$= \frac{\partial\bar{S}}{\partial O_p}\cdot\left[T\left(\frac{\partial f}{\partial L}\cdot\frac{dL}{dt} + \frac{\partial f}{\partial K}\cdot\frac{dK}{dt} + \frac{\partial f}{\partial Q}\cdot\frac{dQ}{dt}\right) + \frac{dT}{dt}\cdot f\right]$$

$$+ \frac{\partial\bar{S}}{\partial p}\cdot\frac{dp}{dt} + \frac{\partial\bar{S}}{\partial r}\cdot\frac{dr}{dt} \quad . \quad . \quad . \quad . \quad (4)$$

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[1] Cf. James Duesenberry, " Income—Consumption Relations and their Implications " in *Income, Employment, and Public Policy : Essays in Honour of Alvin Hansen*, New York, 1948.

$\frac{\partial \bar{S}}{\partial O_p}$ is positive. $\frac{\partial \bar{S}}{\partial p}$ is of course negative; the available evidence suggests that $\frac{dp}{dt}$ is positive but small. However, the only plausible explanation of the increase in time-preference suggested so far is the trend towards more violent fluctuations and, consequently, towards increasing under-employment; apart from this factor, one would, with Harrod,[1] expect time-preference to decline as society matures and people become able and willing to take an interest in the future. Moreover, as economies mature, more saving is performed by corporations, who expect to live forever, and thus have relatively low time-preference. In the absence of a trend towards deeper depressions, it is very doubtful whether any trend towards higher time-preference would appear at all. We cannot *assume* our case; and therefore we shall attach little weight to the $\frac{\partial \bar{S}}{\partial p} \cdot \frac{dp}{dt}$ term.

So far as we know, $\frac{\partial \bar{S}}{\partial r}$ is small, and probably $\frac{\partial^2 \bar{S}}{\partial r^2}$ is < 0; as interest rates fall lower and lower, savings will be less and less affected by a further fall. Moreover, in the absence of an active monetary policy, $\frac{dr}{dt}$ will also be small, and $\frac{d^2 r}{dt^2}$ will be negative. With interest rates as low as they already are, further declines will encounter more and more resistance. Thus the term $\frac{\partial \bar{S}}{\partial r} \cdot \frac{dr}{dt}$ will be small, and will get smaller as time goes by.

So long as $\frac{dL}{dt}$, $\frac{dK}{dt}$ and $\frac{dT}{dt}$ are positive and significantly large, so that $\frac{dO_p}{dt}$ is large, $\frac{d\bar{S}}{dt}$ will be positive. As an approximation, we can therefore write

$$\frac{d\bar{S}}{dt} = \frac{\partial \bar{S}}{\partial O_p}\left[T\left(\frac{\partial f}{\partial L} \cdot \frac{dL}{dt} + \frac{\partial f}{\partial K} \cdot \frac{dK}{dt} + \frac{\partial f}{\partial Q} \cdot \frac{dQ}{dt}\right) + \frac{dT}{dt} \cdot f\right] \quad . \; . \; (4a)$$

The Trend in Investment

According to the Hansen thesis, long-run net investment will be undertaken partly to meet the growth of demand, and partly to develop new resources, new commodities and new techniques. It is assumed that the major factor in spontaneous growth of demand is growth of population. Other things being equal, new investment will vary inversely with the size of the existing stock of capital.[1] Other things being equal, an increase in the stock of capital will reduce its marginal productivity, and if the more profitable investment outlets are first exploited, marginal efficiency may fall faster than marginal productivity. Also, a growth in stock of capital is usually accompanied by an increase in the risk, illiquidity and indebtedness assumed by entrepreneurs. Finally, other things being equal, investment will vary directly with the current level of output, although the effect of changes in output (real income) on net investment may be small, as econometric studies suggest. Thus

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[1] Cf. R. F. Harrod, *Towards a Dynamic Economics*, London, 1948, p. 53.

$$\bar{I} = \lambda(O_p) + \phi\left(\frac{dL}{dt}, \frac{dK}{dt}, \frac{dT}{dt}\right) - \psi(Q) \quad . \quad . \quad (5)$$

or

$$\bar{I} = \lambda(O_p) + \phi(\dot{L}, \dot{K}, \dot{T}) - \psi(Q)$$

and

$$\frac{d\bar{I}}{dt} = \frac{d\lambda}{dO_p} \cdot \frac{dO_p}{dt} + \frac{\partial\phi}{\partial\dot{L}} \cdot \frac{d^2L}{dt^2} + \frac{\partial\phi}{\partial\dot{K}} \cdot \frac{d^2K}{dt^2} + \frac{\partial\phi}{\partial\dot{T}} \cdot \frac{d^2T}{dt^2} - \frac{d\psi}{dQ} \cdot \frac{dQ}{dt} \quad . \quad . \quad . \quad (5a)$$

It seems likely that as a factor in *trends*, as distinct from fluctuations, ψ may be rather small;[2] and there is no reason to expect $\frac{d\psi}{dt}$ to be large.

It seems probable that $\frac{d^2T}{dt^2}$ is very small, perhaps zero. It may even be negative. Even if the rate of technological improvement were increasing, $\frac{\partial\phi}{\partial\dot{T}}$ would be small if the improvements (once in place) were capital saving. Yet when $\frac{d^2L}{dt^2} < 0$ and $\frac{d^2K}{dt^2} < 0$—that is, when population growth and development of frontiers are both tapering off—only a *very rapidly increasing* rate of technological progress could keep $\frac{d\bar{I}}{dt} > 0$.

This point is of such importance, and has been surrounded by so much misunderstanding, that it is worth elaborating. A constant rate of technological progress in and of itself will *not* give rise to net investment, over and above replacement needs. There are three ways in which innovation may induce net investment, and so provide an offset to net saving: by accelerating replacement; by inspiring hopes of (temporary) monopoly profits for the first firms in the new field or those using the new technique ("Schumpeter effect"); and by introducing new consumers' goods so attractive as to raise the propensity to consume.[1] Replacement will not be accelerated by innovation if obsolescence proceeds at a constant rate; depreciation allowances will be set in terms of obsolescence rather than physical wear and tear, and innovation will provide no offset to net saving. If the propensity to consume rises at a constant rate, consumption will also (other things being equal) rise at a constant rate. In this case replacement needs will grow, but only slowly. If we ignore favourable effects of rising real income, as such, and the unfavourable effects of capital accumulation, $I_g = h \,.\, Q + \phi\,(\dot{L}, \dot{K}, \dot{T})$, where h is the proportion of capital replaced in every year. If $\dot{L}$, $\dot{K}$ and $\dot{T}$ are constant, then $\frac{dI_g}{dt} = h\frac{dQ}{dt} + Q\frac{dh}{dt}$. In a society with a large stock of highly durable capital, h will be small. Since plant and equipment tends to become more durable as lubricants are improved, repairs made easier and materials stronger, $\frac{dh}{dt}$ may well be negative. Against this trend, however, must be set the trend towards a larger proportion of net investment in equipment subject to rapid obsolescence. On balance, $\frac{dh}{dt}$ is probably not significant. Moreover, if accumulation of capital rests on nothing more substantial than a rising secular trend in the propensity to consume, resulting from the increasing attractiveness of consumption, $\frac{dQ}{dt}$ may also be small. In any case, innovations raising the propensity to consume must be largely confined to consumer durables; and if innovations in consumers' goods take place at a constant rate, consumers may behave like entrepreneurs, and replace obsolete consumer durables by new ones with reserves built up for the purpose, so that no rise in consumption outlays would be occasioned by innovations.

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[1] See, for example, L. Klein, *A Macro-Economic System: U.S. 1921–1941* (mimeographed, Cowles Commission of Economic Research), 1947; Colin Clark, "A System of Equations Explaining the U.S. Trade Cycle 1921-1941," *Econometrica*, April 1949; M. Kalecki, *Studies in Economic Dynamics*, London, 1943.

[2] Cf. E. D. Domar, "The Problem of Capital Accumulation," *The American Economic Review*, December 1948. One type of capital accumulation in particular —increases in inventories—would appear to be far more important for cycles than for trends.

Finally, the "Schumpeter effect" of innovation will lead to net investment only if the stream of innovations is growing—even if the inventions, once in place, are not capital-saving, but

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[1] Cf. B. Higgins, "Concepts and Criteria of Secular Stagnation," *loc. cit.*

"neutral" in the Harrod sense.[1] Each innovation will absorb capital during its gestation period, but once the New Firms are established and the New Plant and Equipment is in place, it will absorb capital only for replacement purposes. Assuming that in each income period a "bunch" of innovations is begun that is precisely as capital-absorbing throughout all subsequent history as the "bunch" started in the previous period, total capital requirements, and gross offsets to savings, will grow only as fast as replacement needs accumulate. Since the very process of innovation will lead ultimately to the obsolescence of plant and equipment brought into being by past innovations, and so to the complete disappearance of replacement needs for such innovations, net capital absorption will tend ultimately towards zero. The process is illustrated in Fig. 1.[1a]

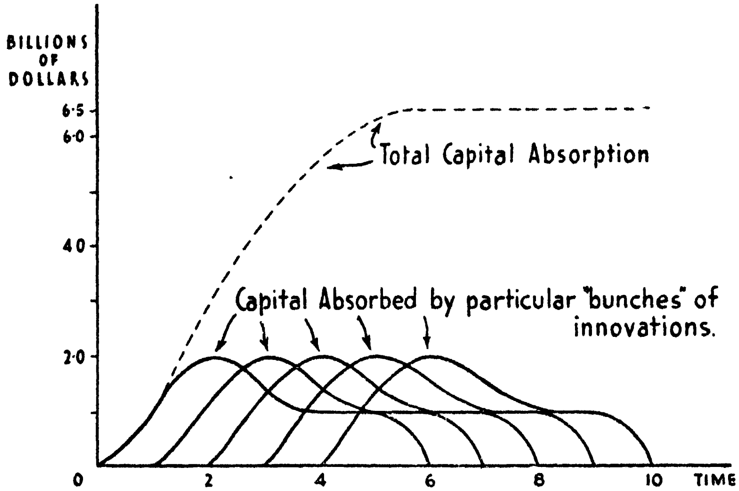

Fig. 1.

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[1] Cf. Harrod, *op. cit.*, p. 23.

[1a] Fig. 1 is based on the following table :—

Time period : Innovation number.	1	2	3	4	5	6	7	8
	Amount of capital absorbed ($ billions)							
1	1·0	2·0	1·5	1·0	1·0	0·0	0·0	0·0
2	—	1·0	2·0	1·5	1·0	1·0	0·0	0·0
3	—	—	1·0	2·0	1·5	1·0	0·0	0·0
4	—	—	—	1·0	2·0	1·5	1·0	1·0
5	—	—	—	—	1·0	2·0	1·5	1·0
6	—	—	—	—	—	1·0	2·0	1·5
7	—	—	—	—	—	—	1·0	2·0
8	—	—	—	—	—	—	—	1·0
Total capital absorption	1	3	4·5	5·5	6·5	6·5	6·5	6·5

The argument can also be set forth in terms of equation (5) above. Assume first of all a stationary state without technological progress, population growth or

If growing replacement needs are not provided for by increased business saving, the mere growth of the stock of capital would provide some offset to other forms of saving. However, what we know of business behaviour suggests that failure to increase business saving as the volume of assets grows is the exception rather than the rule; indeed, Hansen has argued that because of the frequency of capital-saving inventions, the normal volume of business saving may be more than enough to provide for mere replacement, and that some net accumulation of capital (in terms of productive capacity) could be financed by business saving alone. It would be quite a simple matter to recast the argument in terms of gross saving (S_g) and gross investment (I_g), adding " $\frac{\partial \bar{S}_g}{\partial Q} \cdot \frac{dQ}{dt}$ " to the savings function and " $\frac{\partial \bar{I}_g}{\partial Q} \cdot \frac{dQ}{dt}$ " to the investment function. It seems improbable, however, that

$$\left(\frac{\partial S_g}{\partial Q} \cdot \frac{dQ}{dt} - \frac{\partial I_g}{\partial Q} \cdot \frac{dQ}{dt}\right)$$

would be quantitatively significant.

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resource discoveries. Under these conditions $\frac{dO_p}{dt}$ is zero, and $\frac{dQ}{dt}$ is zero. Since the favourable effects on investment of a high level of real income, and the unfavourable effects of a large stock of capital, depend largely on the expectations they create, λ and ψ will tend to be insignificantly small in such a stationary state. Suppose $\lambda(O_p)$ and $\psi(Q)$ can be ignored, and $\bar{I} = 0$.

Now suppose a constant rate of technological progress is introduced into the system, so that $\frac{d\dot{T}}{dt} = 0$.

Then $\bar{I} = \phi(\dot{T})$, and $\frac{d\bar{I}}{dt} = \frac{d\bar{I}}{d\dot{T}} \cdot \frac{d\dot{T}}{dt} = 0.$

Thus a constant rate of technological progress will perpetuate past rates of growth, but will not accelerate the rate of growth. If $\bar{I} = 0$ to begin with, since $\frac{d\bar{I}}{d\dot{T}} \cdot \frac{d\dot{T}}{dt} = 0$, the introduction of a constant rate of technological progress will generate no net investment.

The same conclusion is reached by M. Kalecki (*Studies in Economic Dynamics*, pp. 89–92). Mr. Harrod, who *defines* a " neutral " stream of inventions as one which requires a rate of increase in capital equal to the rate of interest engendered by it, concludes that " a steady and neutral advance " will require net investment if an economy operates under a goods standard, but not if it operates on a labour standard (*Towards a Dynamic Economics*, pp. 27–31). However, the question raised in the present essay is a different one, viz., will a constant stream of innovations, in itself, *engender* net investment, and so provide a net offset to saving? If equation (5) is valid, it seems that it will not.

A situation where $\bar{I} = 0$ is apt to occur in depression, when, let us say, $\lambda(O_p) = \psi(Q)$ and $\dot{L} + \dot{T} + \dot{K} = 0$. If then a constant rate of innovation sets in, while $(\dot{L} + \dot{K}) = 0$, $\frac{d\bar{I}}{dt} \cdot \frac{d\dot{T}}{dt} = 0$ and $\bar{I}$ remains zero. Analogous arguments apply to a constant rate of population growth or a constant rate of discovery of new resources. It is for this reason, perhaps, that " secular stagnation " is most likely to make its presence felt after a period of prolonged depression.

We can now state our conclusions. Substituting equations (4*a*) and (5*a*) in equation (3*b*),

$$\begin{aligned}\frac{dN}{dt} = l\Bigg\{\Bigg\{\frac{d\bar{S}}{dO_p}\Bigg[T\left(\frac{\partial f}{\partial L}\cdot\frac{dL}{dt}+\frac{\partial f}{\partial K}\cdot\frac{dK}{dt}+\frac{\partial f}{\partial Q}\cdot\frac{dQ}{dt}\right)+\frac{dT}{dt}\cdot f\Bigg]\Bigg\} \\ -\Bigg\{\frac{d\lambda}{dO_p}\Bigg[T\left(\frac{\partial f}{\partial L}\cdot\frac{dL}{dt}+\frac{\partial f}{\partial K}\cdot\frac{dK}{dt}+\frac{\partial f}{\partial Q}\cdot\frac{dQ}{dt}\right)+\frac{dT}{dt}\cdot f\Bigg] \\ +\left(\frac{\partial\phi}{\partial\dot{L}}\cdot\frac{d^2L}{dt^2}+\frac{\partial\phi}{\partial\dot{K}}\cdot\frac{d^2K}{dt^2}+\frac{\partial\phi}{\partial\dot{T}}\cdot\frac{d^2T}{dt^2}\right)-\frac{d\psi}{dQ}\cdot\frac{dQ}{dt}\Bigg\}\Bigg\}\end{aligned}$$

Thus when potential real income is increasing at an increasing rate, as a result of rapid population growth, expanding frontiers and rapid technological progress, there will be growing pressure on the labour supply, and a chronic inflationary gap is likely to occur. When population, supplies of new resources and technical knowledge are growing, but at a decreasing rate, savings will still rise; while at some point in time the unfavourable effects on investment of declining rates of growth and a growing stock of capital will tend to offset the favourable effects of a rising real income. From that point onward, net investment will tend to fall, and unemployment to increase. Thus an economy will tend to suffer increasing under-employment soon after the rate of growth falls off. It should be noted, moreover, that increasing under-employment will tend to appear if *any one* of $\frac{dL}{dt}$, $\frac{dK}{dt}$ or $\frac{dT}{dt}$ is positive, while its corresponding second derivative is negative, and the sum of the other second derivatives in the investment function is zero.

III

To the present writer's knowledge, there is no systematic theory of trend that contradicts the model set forth above; all other systematic theories of economic development duplicate, fortify or supplement it. A few brief examples should suffice to demonstrate this point.

In Schumpeter's model, the economic growth of capitalist societies (as distinct from the inevitably cyclical pattern of their development) seems to depend somewhat on population growth, to a greater extent on discovery and development of new resources (which is one type of innovation) and above all on technological progress, which Schumpeter regards as the most dynamic form of innovation. Continued growth requires a swelling stream of innovations, which will occur only with a growing supply of " New Men " to found " New Firms " and construct " New Plant and Equipment." It is never quite clear what determines the supply of " New Men," but Schumpeter apparently believes that the supply will be abundant in a relatively young capitalist society, and that it will be choked off later by a social climate antipathetic to enterprise, which will develop as a " natural " reaction to the very success of Capitalism.

Schumpeter does not deny the logical consistency of the Hansen theory. He even has some frills of his own to add : the mechanisation of progress slows down innovation, and childlessness " eliminates much of the driving power from bourgeois motivation." The latter factor, however, might reduce savings as well as investment. Schumpeter does deny that the Hansen thesis explains the depth and duration of the great depression of the thirties. The down-swing was to be expected,—at least apart from the financial crises of 1931 to 1933—from his business-cycle model itself. It is only " the disappointing Juglar "—the down turn in 1937 after so incomplete a recovery—that needs special explanation. Schumpeter finds this explanation in his own theory of stagnation ; the New Deal, with its higher income taxes, capital gains and undistributed profits taxes, payroll taxes, public investment, labour legislation, regulation of the capital market and so on, was the epitome of a social environment hostile to " New Men," and so prevented the stream of innovations from developing " naturally."

In terms of the above model, then, Schumpeter's theory of increasing under-employment amounts to two propositions about terms in the investment equation (equation 5) :—

(1) $\frac{\partial \dot{\phi}}{\partial \dot{T}} > \frac{\partial \dot{\phi}}{\partial \dot{K}} > \frac{\partial \dot{\phi}}{\partial \dot{L}}$

(2) $\frac{d\phi}{dt} < 0$, because of the growth of an " hostile environment " for New Men.

Thus the Schumpeter theory does not contradict, but fortifies, the Hansen thesis, by suggesting additional reasons for increasing under-employment in an advanced capitalist society.[1]

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[1] The above comments apply to Schumpeter's *Business Cycles*, where his theory of economic development is presented in a systematic form. In his *Capitalism, Socialism, and Democracy*, Schumpeter appears somewhat more critical of the Hansen theory. He suggests (pp. 113–14) that since human wants are inexhaustible, the aggregate volume of consumer spending in a society may rise at a constant rate, even if population growth is tapering off, through an offsetting rise in the propensity to consume. This possibility cannot be excluded, but Schumpeter has not established any logical necessity for such a development, nor has he provided any empirical evidence that it has taken place. He also

Harrod's theory is in many respects an alternative formulation of the Hansen thesis.[1] It is a formulation that has both advantages and disadvantages.[2] His fundamental equations, $GC = s$ and $G_wC_r = s$, are convenient in their applicability to both mature and under-developed economies; in countries where the rate of actual growth (G) is rapid (because, say, population growth is rapid) there will be a chronic tendency for G to exceed the "warranted" rate of growth (G_w),[3] and consequently a chronic tendency for required capital accumulation (C_r) to exceed actual capital accumulation (C) (since GC and G_wC_r both $= s$, the average propensity to save). This situation leads to a chronic inflationary gap. In a slowly growing economy, G_w will tend to exceed G, C will tend to exceed C_r and a chronic deflationary gap will appear. This applicability to both slowly and rapidly growing economies might also be claimed for our own model; but the *cumulative*

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argues that improvements in technique may offset the effects of a declining rate of population growth on production. (pp. 114–15). Such a development, however, would mean only that *potential* output in our model could continue rising at a given rate; it would not assure an equal rise in the trend of *actual* output. It is also true that a sufficient rate of technological progress may offset the effects on investment of a declining rate of population growth, as our model indicates. Schumpeter admits that the opening up of new lands was a "unique opportunity for investment that may not recur" (p. 115), but reiterates the argument that other opportunities may appear, through an increasing rate of technological progress. This argument, however, is quite consistent with the Hansen thesis; the question is whether an increasing rate of technological progress is likely to occur. Schumpeter also suggests that the pure marginal efficiency of capital might rise through time ($\frac{d\phi}{dt}$ might be positive), if it were not for the development of an environment hostile to private enterprise.

In the new chapter added to the second edition of this book, Schumpeter insists (p. 396) that people save only in order to invest. Thus "if $20 billion is more than can be newly invested at a rate of return satisfactory to the marginal saver, why, people would be only too happy to consume the excess." This statement, made in 1947, is surely one that should have been supported analytically or empirically. With the income distribution that would result from a completely neutral fiscal policy, would there not be some people too rich to spend all their incomes? And what of such institutions as life insurance, which accounts for more than half of personal savings in the United States and Canada? Is it certain that premiums would drop too (benefits plus costs) if insurance companies had no investment outlets except government bonds? Perhaps what Professor Schumpeter means is that the "hostile environment" prevents conspicuous consumption, as well as new investment ventures, and that people would find means of spending their incomes, no matter how high, in the absence of such a "hostile environment."

[1] R. F. Harrod, *Towards a Dynamic Economics*, London, 1948.

[2] For a more comprehensive analysis of Harrod's theory, *vide* B. Higgins, "Towards a Dynamic Economics," *The Economic Record*, December 1948.

[3] Harrod's G_w is a rather complicated concept. It is the percentage rate of increase in national income that leaves entrepreneurs in subjective *ex post* equilibrium, and so perpetuates the same rate of growth.

nature of departures from a full-employment-without-inflation rate of growth appears more clearly in Harrod's model. Harrod is also able to make a somewhat more useful application of his equations to the trade cycle than could be claimed for the model presented here.

On the other hand, Harrod's equations are not really operational; they isolate no fundamental *causal* relations. In particular, they provide no explanation of investment decisions, nor even of the fundamental " warranted rate of growth." Also, his discussion of the casual relations *behind* the equations, while it is essentially along the lines of Hansen's thesis, leaves out discovery and development of new resources (the geographic frontier) [1] as a factor in economic growth. There seems no good reason for this omission from a general theory of trend. Development of " frontiers " has been an important factor in economic growth in the past, and it is only by ignoring it that Harrod is able to exclude diminishing returns from the land as a factor limiting economic expansion.

Domar's theory,[2] like Harrod's, is based on an equation for the " equilibrium " rate of growth : $\frac{\Delta I}{I} = \alpha\sigma$. ($I$ is net investment, α is the marginal propensity to save and σ is the increase in productive capacity due to net investment.) Domar's formal presentation, like Harrod's, provides in itself no theory of investment. It amounts to saying that the volume of spending generated by investment must be sufficient to absorb (at profitable prices) the increased output made possible by investment, if equilibrium is to be maintained. It also shows, however, that if α and σ are constant, investment must increase at a constant *percentage* rate for equilibrium to be maintained. The reason for this necessity is essentially that the rate of increased flow of goods and services depends on the rate of investment, while the rate of increase in income generation depends on the rate of increase in investment. In terms of our equations, it means that with α and σ constant, the combined effects of $\frac{d\phi}{dt}$ and of $\dot{K}$, $\dot{T}'$ and $\dot{L}$ must be constant; and it fixes this constant at a given *percentage* rate of increase. Thus the more capital is accumulated, and the higher national income already is, the greater must be the *absolute* volume of net investment; *and the absolute amount of net investment must expand at an increasing rate, if full employment is to be maintained.* In an advanced society, where much capital is already accumulated and income is already high (and where α may be increasing as well), this is a tall order.

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[1] I have endeavoured to define the " geographic frontier " and to explain its importance for investment in " Concepts and Criteria of Secular Stagnation," *loc. cit.*

[2] E. D. Domar, " Capital Expansion, Rate of Growth, and Employment," *Econometrica*, April 1946; " Expansion and Employment," *The American Economic Review*, March 1947; " Investment, Losses, and Monopoly " in *Income Employment, and Public Policy : Essays in Honour of Alvin H. Hansen*, New York, 1948.

Thus Domar's formal theory, set forth in the first two essays, amplifies the Hansen thesis. The third of his triptych of essays contains the suggestion of a further supplement to the model set out above. In our model, trends in the efficiency of allocation of resources have been ignored. Domar suggests that $\frac{d}{dt}(O_p - O_a)$ may be positive, not only because of increasing under-employment of labour, but also because of increasing excess capacity and waste of capacity, due on the one hand to growth of monopoly power, and on the other to increasing imperfection of foresight regarding innovations and consequent obsolescence. The growth of monopoly not only leads to increasing unemployment of capacity, but, by retarding innovation, causes unemployment of labour as well. Whether innovation takes the form of development of new techniques or development of new resources, some existing interest is injured; and if these vested interests are protected by strong monopoly organisations, innovations will be delayed. Hence the importance of the New Firm, in a new field, with no existing vested interests to displace.

Kalecki's theory of trend has the advantage of isolating the major factors determining the trend in investment, which is in turn the primary determinant of the rate of economic expansion.[1] In his system, " the chief determinants of investment in the long run " are " changes in capitalists' consumption, rentiers' savings, and innovations." In contrast to the Domar and Harrod models, Kalecki's theory of trend incorporates the effects of time-lags, although these are naturally less important in his trend theory than in his cycle theory.

All the " chief determinants " are likely to lose force in an advanced capitalist society. The " stable part of capitalists' consumption," A, increases, after a lag, with capitalists' wealth and income. But capitalists' income does not rise proportionately with output, because of the growth of overhead costs as capital accumulates; a positive $\frac{dA}{dt}$ may not raise profits; and with increasing concentration of capitalists' wealth and income, $\frac{dA}{dt}$ may be negative even if profits have been rising in the past. For all these reasons, in a mature economy (one with high income and much capital) $\frac{dA}{dt}$ is likely to be negative. Schumpeter's "hostile environment" would add to the forces making $\frac{dA}{dt}$ negative, by discouraging conspicuous consumption. *Rentiers'* savings cause negative long-run investment by their very existence, by increasing entrepreneurs' indebtedness. Innovations, unless capital saving, tend to raise investment, but their effectiveness in this respect is reduced by the trend towards monopolisation and "mechanisation of progress."

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[1] M. Kalecki, *Studies in Economic Dynamics*, London, 1943, Chapter 5.

In our model a negative $\frac{dA}{dt}$ would show up in equation (5*a*) as a reduced value of $\frac{\partial\phi}{\partial\dot{L}}$ at any point of time and a negative $\frac{\partial^2\phi}{\partial\dot{L}^2}$. A rising trend in *rentiers'* savings and the accompanying increase in entrepreneurs' indebtedness through time would reduce ϕ with respect to all the independent variables ($\dot{L}$, $\dot{K}$ and $\dot{T}$), and would mean that $\frac{d\phi}{dt}$ would be negative. The retardation of technological progress would mean that $\frac{\partial\phi}{\partial\dot{T}}$ would be reduced, and that $\frac{\partial^2\phi}{\partial\dot{T}^2}$ would be negative; and might also mean that $\frac{d^2T}{dt^2}$ would be negative.

Kalecki's model also elaborates the effects of a constant rate of technological progress; it will not *in itself* produce expansion, and would leave a stationary state stationary; but in an economy expanding at a given rate *for other reasons*, a constant rate of technological progress will tend to perpetuate that rate.

Thus Kalecki's model does not in any way contradict Hansen's theory of increasing under-employment, but amplifies and supplements it.

Professor Keirstead's theory of trend also makes economic development dependent upon innovation, a moving frontier and population growth, with the main emphasis on innovation.[1] Keirstead prefers to treat discoveries of new resources (movement of the frontier) as a type of innovation; this treatment does not alter the argument fundamentally, but has the disadvantage, already noted, of making it less apparent that when the rate of discovery and development of new natural resources slows down, expansion becomes increasingly dependent on technological progress.

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[1] B. S. Keirstead, *The Theory of Economic Change*, Toronto, 1948.

Keirstead accepts the theory of increasing under-employment in general, but stresses growth of monopoly as a factor reducing the expansionary effects of innovations. Accordingly, he criticises Hansen and his followers (not altogether justly) for concentrating on *compensating* for undesirable trends, rather than seeking policies to *remove* the causes of stagnation, by stimulating population growth, encouraging innovation and reducing the degree of monopoly. The general theory of trend, however, is the same as Professor Hansen's.

The novelty in Professor Keirstead's treatment lies in his synthesis of aggregative effects with the behaviour of particular firms and industries, and in his integration of the theory of industrial location with the theory of economic growth. Professor Keirstead explains how economic growth in one part of an economy is likely to cause decline in others, leading—in the absence of perfect competition and perfect mobility—to structural unemployment. An odd remark or two of his also suggests a simple link between the theory of the Kondratieff cycle and the theory of trend; given the *trend* factors (population growth, rate of discovery of new resources, etc.) the Kondratieff cycle becomes a matter of changes in the rate of "linked advance" (chains of innovations). In our own model the Kondratieff cycle would then consist of changes in T from exogenous factors, other factors remaining constant.

IV

All economists who have recently devoted special attention to the theory of economic development seem to agree that the capitalist organism will tend to lose its vigour at some stage, and that increasing under-employment will be one symptom of senility in capitalist economies. Indeed, not even the critics of the theory of increasing under-employment have sought to deny that, *other things being equal*, a decline in the rate of population growth, or in the rate of development of new resources, or in the rate of technological progress, will tend to reduce net investment. Nor have they endeavoured to fly in the face of facts to the extent of arguing that rates of population growth and discovery of new resources are *not* declining in the Western democracies. What they have argued, in effect, is that other things are *not* equal, and that the inequality of other things tends to offset the deleterious effects of declining population growth and disappearance of the frontier.

What could these " other things " be?

First of all, there are the possible offsetting factors that have been deliberately excluded from our model: $\frac{dl}{dt}$ in equation (3*a*) *may* be negative, and large enough to nullify the effects of a growing deflationary gap; $\frac{\partial \bar{S}}{\partial p} \cdot \frac{dp}{dt}$ and $\frac{\partial \bar{S}}{\partial r} \cdot \frac{dr}{dt}$ in equation (4) *may* be negative and significantly large; $\frac{d\lambda}{dO_p} \cdot \frac{dO_p}{dt}$ in equation (5*a*) *may* be positive, and big enough to offset the combined effects of declining rates of growth in L, K and T and of capital accumulation; or $\frac{d\phi}{dt}$ *may* be positive, and large enough to offset all factors affecting investment unfavourably. None of these conditions seems very likely, but they cannot be considered impossible without more knowledge than we now have.

The classical theory, which has been reiterated as an argument against the theory of increasing under-employment, argued in effect that a tendency for savings to exceed investment would be neutralised by a fall in the interest rate. It seems likely that a fall in interest rates would reduce saving out of given incomes somewhat;[1] but it is highly improbable that any feasible fall in interest rates could offset the effects of a fall in income of any size.[2] Moreover, to be effective in combating *trends* leading to unemployment, interest rates must be *continuously* reduced. There is little indication of an " automatic " tendency for interest rates to fall all the way to zero—let alone below zero. Interest rates below zero really constitute subsidies to private investment, which only governments can undertake, and which are among the remedies proposed (with qualifications) [3] by the exponents of the theory of increasing under-employment. There is the possibility, already noted, that $C(Y)$ may rise as a *result* of increasing under-employment; but this fact, if clearly established, obviously could not disprove the Hansen theory. There seems to be no other reason to expect the propensity to save to fall through time. True, a declining rate of population growth means an ageing population, and the aged are net dis-savers; but so are children.[1] Here again, however, more empirical research is needed.

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[1] Cf. Harrod, *op. cit.*, pp. 41–51; Higgins, " Towards a Dynamic Economics," *op. cit.*, pp. 177–179, and " A Diagrammatic Analysis of the Supply of Loan Funds," *Econometrica*, January 1941.

[2] Cf. L. Klein, *The Keynesian Revolution*, New York 1947, pp. 84–86 and 202–204.

[3] Cf. M. Kalecki, *op. cit.* "Full Employment by Stimulating Private Investment?" *Oxford Economic Papers*, No. 7, March 1945.

Similarly, according to classical theory, as reiterated by certain critics of the theory of increasing under-employment, a fall in interest rates would raise ϕ. Recent evidence, empirical and analytical, suggests that it would, but not much. That is, $\frac{\partial\phi}{\partial r}$ is small, $\frac{dr}{dt}$ is small and $\frac{\partial\phi}{\partial r} \cdot \frac{dr}{dt}$ is so small that we did not include it in equation (5*a*). Still, this controversy cannot be considered completely closed.

Another thing that may not "remain equal" is the rate of technological progress. The facts here are not clearly established, and are not easily discovered. All that can be said is that when the Schumpeter, Domar and Kalecki arguments are added to the Hansen argument, it seems highly improbable that the rate of technological progress could *increase* fast enough over a long period to offset a decline in the rate of population growth and of discovery of new resources. There is certainly no *automatic* tendency for it to do so. A constant rate of technological progress tends to cause a *growing* deflationary gap. As argued above, a constant $\frac{dT}{dt}$ will not in itself call forth net investment; but it will raise real income, and thus raise savings, for any level of employment. Moreover, as equation (2*a*) shows, the deflationary gap $(O_p - O_a)$ varies directly with the level of technique. Even if $(\bar{S} - \bar{I})$ is constant, a positive $\frac{dT}{dt}$ will, other things being equal, result in a growing gap between potential and actual levels of national income. During the 1920's, the flow of capital-absorbing innovations, together with the replacement wave launched by World War I, was apparently enough to hide any trend towards increasing under-employment in most countries; but these were cyclical, not secular, forces. Empirical research, in which technological progress was isolated and measured over a long period to discern a trend, would be very helpful in assessing the possibility of a rapidly increasing rate of technological progress; but since technological progress depends partly on the growth of scientific knowledge and partly on entrepreneurial expectations, econometric research may not give us a final answer to this question.

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[1] Of course, the propensity to consume out of national income may be affected by policies regarding social security, taxation and so forth. Our purpose here, however, is to develop a pure theory of trend that would provide a *basis* for economic policy; such a theory must obviously abstract from the *effects* of policy.

Finally, critics of the thesis suggest that if it were not for "frictions," certain things that now "remain equal" (more or less) but should not, such as wages, would adjust themselves so as to eliminate unemployment. This controversy is an old one; my own assessment of it is presented elsewhere.[1] But whatever may be said for wage-flexibility as a device for curing cyclical unemployment, there is very little indeed to say for it as a measure to eliminate secular unemployment; for, as Harrod points out, as a long-run policy wage-cuts would have to be continuous. Even if such a policy were not morally and politically unacceptable, it would be of doubtful merit because of its probable tendency to reduce the propensity to consume, and so aggravate the forces of stagnation.

V

There does not seem to be any very strong argument against the theory of increasing under-employment, provided the validity of the long-run investment equation is granted. On the other hand, the critics may have been too kind in granting the Hansen argument that population growth, discoveries of new resources and technological progress are the main long-run causes of net investment. The hypothesis that population growth stimulates net investment, especially needs more careful investigation. As Kalecki points out, population growth will not raise profits (and so investment) *unless* it raises consumption as well. Historically, consumption and population have increased together. Additions to population have always been provided with some income, at least in Western capitalist countries; children have been looked after by parents, the aged by their children, and people of all ages unable to earn enough to keep alive have been provided with incomes by private charity or by the State. The provision of income to those unable to support themselves seems to have been partly at the expense of savings. For these reasons, perhaps, entrepreneurs may have come to *expect* that growing population will broaden their markets, and the rate of population growth may act directly on investment through its effects on entrepreneurial expectations. Also, population growth acts directly on certain current data, such as trends in real-estate values, which influence investment decisions directly. Finally, people are workers as well as consumers, and a growing population permits capital to be accumulated without increasing the ratio of capital to labour, and so reducing the marginal productivity of capital. Nevertheless, the precise process by which population growth generates investment needs further examination—historical, statistical and analytical.

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[1] B. Higgins, "The Optimum Wage Rate," *Review of Economics and Statistics*, May 1949.

The process through which innovations and discoveries of new resources create net investment will also bear re-examination. Innovations displace old commodities and techniques, new resources displace old ones; is the net effect *necessarily* favourable? There are plausible reasons for thinking it is; innovations or discoveries of resources may bring temporary monopoly gains, accelerated replacement and a lifting of the propensity to consume. Are any of these results logically necessary? Pure competition, with complete freedom of entry and fluidity of capital, would eliminate any prospect of monopoly gain; accelerated replacement may not cause expansion if it is foreseen, and existing plant is accordingly written off more quickly—the result will depend on the net effect on *ex ante* savings and investment period by period; and there is no assurance that the attractive new commodities will be bought at the expense of savings rather than other items of consumption. A large number of "case studies," providing detailed information on the precise effects of particular innovations on investment in the new industry, in related old industries, in displaced industries; on the level and pattern of consumer spending and saving, on monopoly power and on profits, would be very helpful.[1]

Meanwhile, it appears to the present writer that the onus of proof is on the critics of the theory of increasing under-employment. The theory cannot be said to be proved; there are *conceivable* conditions, outlined above, that could make it wrong. However, with present knowledge, the assumptions on which the theory is based seem more plausible than the assumptions that would make it wrong.

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[1] A useful beginning in this direction is made by Léon H. Dupriez, *Des Mouvements Économiques Généraux*, Louvain 1947, Part II, pp. 219–552. The classical theory of stagnation, especially J. S. Mill's version of it, is worthy of reconsideration in this context. If population is no longer growing, the marginal efficiency of capital has fallen to the minimum necessary to make replacement worth while, and pure competition exists, it seems quite plausible that technological progress would lead simply to more and more displacement of labour, increased leisure and "cultivation of the Arts," rather than to net investment.

THE SPRINGS OF TECHNICAL PROGRESS IN BRITAIN, 1919–39

THIS article is an offshoot of a larger study, on which I have for some time been engaged, of the British economy between the wars. Before a definitive economic history of the inter-war period can be written, many sources of information at present private will have been opened, and a whole generation of research workers will have had to sift the material. My own study is essentially a preliminary survey which will I hope serve to point some of the questions to be answered, and to guide the researchers' inquiries. But it is all too clear to me that even this preliminary survey will not be ready for publication for some considerable time, and it has therefore seemed worth writing the present notes on an aspect which should have more attention than it has been receiving. Some of the economic historian's questions about inter-war Britain are already fairly well understood—on the international trading position and on monetary policy, for example. Technical progress, on the other hand, is a matter that has been pushed into the background. Worse than that, it is almost being denied in pronouncements which, for one reason or another, emphasise "stagnation" and "lack of enterprise" in British industry during the 'twenties and 'thirties. While perhaps fair enough within their contexts and not misleading to those whose memories hold direct knowledge of the rapid changes of the period, such statements do run the risk of misleading a younger generation. A new generation of economists, economic historians and (worst of all) political economists who believed literally in the "stagnation" of British industry between the wars, would be a disaster which I must strive to avert. My main purpose in this article is not, however, to chronicle the technical changes—that would be too long a story—but to sûrvey the factors which appear to have had important effect on the rate of change.[1]

Technical progress in the period was in fact spectacular. Measurements of productivity over the whole field have not, hitherto, been worth much, but a cautious authority has thought fit recently to quote an estimate of 50% for the average rise in output per man-hour between 1914 and 1931.[1] Change was manifest to the man-in-the-street, particularly in the motor car, the aeroplane, the radio, electrification, artificial silk (its younger plastic brothers were only just becoming known) and mechanisation here, there and almost everywhere. These manifestations had their roots in comparatively few major developments, springing mainly from the first decades of the century, infinitely elaborated in practical application in many directions. The oldest of the innovations were the internal-combustion engines (both petrol and diesel types) and those bearing on the generation and transmission of electricity. A less spectacular item came from the bicycle—the use of ball-bearings in machines where high speeds were involved. Then a little later there were in metallurgy two developments amounting to a revolution. First of these was the invention of manganese steel and stainless steel, the two outstanding forerunners of a long and extraordinarily fruitful series of new alloys, both ferrous and non-ferrous. Secondly, the other basic problem which has faced metallurgists throughout the ages, the problem of jointing, came to be widely dealt with by welding, which, though not altogether new, was newly appreciated and applied over a wide field. Chemists discovered the possibilities of new processes at extreme temperatures and pressures, and catalytic methods spread rapidly. Lastly, among these basic innovations we should include a change due to no single invention but to a host of minor inventions that made possible precise measurement and control of industrial operations where rule of thumb had previously prevailed.

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[1] In preparing this article for publication, I have been saved from error on certain technical matters by comments from Professor H. J. Emeleus and Dr. T. P. Hoar (of Cambridge) and Professor T. S. Ashton (of London), and I gratefully acknowledge their kindness in reading my first draft.

These fundamental changes—the internal-combustion engine, ball-bearings, the new alloy metallurgy, welding, the new chemical processes and precision control—were by no means independent of each other. Advance in one direction depended, again and again, on advance in another direction. The typical new products of the age were made possible by progress along three or four or even all of these lines. The motor car of 1939, for example, depended not only on the internal-combustion engine, but also on the new high-speed multiple machine tools that depended on ball-bearings, the new alloy steel and the electric furnace; on the new ferrous alloys; on plastics for fittings and trimmings; and on electrical power at every turn. Again, the elaboration of the new "special-purpose" steels and non-ferrous alloys was facilitated by the use of the electric furnace,[1] and the employment of these new metals sometimes depended on electric-deposition methods, metal-spraying pistols, welding and other devices for repairing, facing or " tipping " metals. The reaction of the new metals on engine design was already perceptible in 1925.[2] Later they were to be one of the basic factors in the construction of the new high-speed machine tools (particularly in providing better cutting edges and points). In all stages of the processing and transport of food the new metals were revolutionary. For chemical engineering the successes in the struggle against corrosion, and the production of immensely strong metals which could resist extreme temperatures, were vital to the new processes in the chemical industries—particularly in the petroleum refineries.[3]

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[1] Professor G. C. Allen, in the *Westminster Bank Review*, August 1948, cf. L. Rostas, *Comparative Productivity in British and American Industry*, p. 43. ("In these 13 years [1924–37] output per wage earner in manufacturing increased by about 37 per cent.")

There were also innovations which, though they did not have the wide ramifications of those already mentioned, were important in one particular line of production. In shipbuilding, for example, hull design changed radically about the end of the war, and this change combined with the marine-engineering advances (which released much fuel space) to make ship construction profitable despite the glut of ships. Improvement in steam-engines for all purposes—the use of high pressures and " superheating "—was more rapid than it had been for decades. The use of reinforced concrete greatly improved the products of the civil engineers—the docks, harbours and bridges that British engineers were erecting not only in Britain but also in most countries of the world. In the consumption-goods trades, strides in food preservation made possible a more varied yet cheaper diet over the whole year, while the new hosiery machines combined with artificial silk to make the " silk " stocking that revolutionised the appearance of the working-class girls. " The radio " came to give them new entertainment and perhaps a good deal more as well.

It is, of course, true that in many of these items—the radio for instance—the pace of innovation was set in foreign industry rather than in British industry. There were others—shipbuilding and marine engineering especially—where the pace was set by Britain. In still others—in " the new metallurgy " particularly—Britain sometimes led and sometimes fell behind. When people say that British industry was " stagnant " they often mean merely that

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[1] The electric furnace had the advantage of yielding a product comparatively free from non-metallic inclusions, and this was useful in the new alloy steels which were disastrously spoilt by such inclusions.

[2] *The Times Trade Supplement* (hereafter referred to as *T.T.S.*), 6.10.34 (Constructive Economics Section).

[3] See, *e.g.*, *T.T.S.* 16.12.33 (Re-equipment Section).

Britain was predominantly in the rear. To determine whether Britain was in fact more in the rear or in the van would be a vast study in itself, and I cannot attempt it here.[1] What I am anxious to point out is that even when Britain fell behind, the changes in Britain were yet, in many directions, rapid, and the consequences for the standard of living and for working conditions were substantial. If technical progress in automobile production was a peculiarly American contribution to world economics, it remains true that in Britain too the exploitation of the internal-combustion engine in private cars, in buses and in commercial vans and lorries made for more spectacular transformation in material conditions than any other single factor: it contributed to the redistribution of industry, the sprawling of towns far into the adjacent countryside, the new shape of retail trade, the break of the railways' monopoly and many other changes both agreeable and disagreeable. Imitation of the foreigner is not as enterprising and is probably not as profitable as leading the world, but it can none the less "deliver the goods." In the long story of technical progress between the wars, imitation of the foreigner plays a large (and easily overestimated) part. But this story is too long to tell now (even had I the knowledge), and in the remainder of this article I shall ignore imitation of the foreigner and consider how other factors were prompting invention and innovation in British industry.

Technical progress always finds some stimulus in the distortions of war-time demand and supply, and the First War was no exception. In many directions the effect of war was to accelerate rather than to innovate development—aircraft and the motor lorry provide the outstanding examples. Wireless-transmission valves, developed primarily for naval use, and aluminium working, for aircraft and for other military and naval uses, were developments on a comparatively small scale, but sufficient to prompt development for peace-time purposes before the spectacular growth during the Second War. There were others less obviously related to war conditions. Chief among these was automatic welding, which became of widespread importance in engineering of all kinds. Its rise originated in Admiralty needs.[2] The vibration and shock due to gunfire used to work rivets loose, so that many of the rivet-holes in the bulkheads would cease to be watertight. Welding provided a joint which would remain completely watertight. Merchant ships do not have to stand the same shocks, but they do have to suffer some, and it was inevitable that the new process, which quickly proved economical of a particularly onerous type of labour, should be applied far more widely than the original extraordinary need would have suggested.

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[1] The question, of course, bears on the problem of Britain's international trading position.

[2] The "automatic electric welding" process was patented by Mr. L. J. Steele, Electrical Engineer at Portsmouth Dockyard, and Mr. H. Martin (*T.T.S.* 17.12.21 and 14.10.22).

In three branches the chemical industry received special stimulus from war conditions.[1] In petroleum chemistry it is, of course, impossible to separate the stimulus of the First War from that which growth of motors and aircraft would anyway have occasioned. What is certain is that by the middle 'twenties systematic investigation of the chemical and physical properties of crude oil had " brought about a wider outlook and indicated the immense possibilities latent in petroleum." [2] Britain had already become an exporter of the refined material, and the manifold development of new hydrocarbon products was in prospect. The third branch to benefit especially was the new solvents industry, which grew rapidly in the Hull district and elsewhere. It is said [3] that the major impetus to its growth was the necessity of getting rid of surplus war stocks of certain materials. Five products derived from the fermentation of molasses—ethyl acetate, amyl acetate, butanol, acetone and acetic acid—became rapidly better known and found uses in rayon, varnishes, explosives, leather manufactures, synthetic resins, confectionery, perfumery, cosmetics, measuring instruments and a host of other products. The war had also given a direct stimulus to certain plastics, in which these solvents were so important : for instance, it was the war-time need for a non-inflammable coating for aircraft that laid the foundation of Britain's cellulose-acetate industry.[4]

The war was also responsible for great impetus being given to organised research. Quite early in the war it was realised that Britain had fallen behind foreign rivals (particularly Germany) in the application of science to industrial problems, and that this laggardness was proving a handicap in the development of Britain's war potential. The Government accepted the view that it should take immediate steps to promote scientific research in industry, and in July 1915 a department (which in 1916 became the Department of Scientific and Industrial Research) was founded for this purpose. This Department tackled the problem along two lines. Its preferred method of attack was to help industrialists to form their own Industrial Research Associations, whose programmes were, on certain conditions, subsidised from government funds. Among the industries whose research associations were aided in this way were various sections (mostly highly specialised) of the metal and engineering trades, textile and leather industries, the glass industry, laundries, flour mills, confectionery and food manufacture. Secondly, the Department itself undertook certain research work which was considered of national importance, but which for one reason or another was unsuitable for comprehensive attack by private enterprise.[1] Under this heading came the direct work of the Departments research stations, in fuel utilisation, food storage, fundamental physical problems and building materials and methods.

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[1] *T.T.S.* 4.3.22.

[2] *T.T.S.* 26.11.27 (Chemical Section).

[3] *T.T.S.* 9.37.

[4] A minor development accelerated by investigations into the problems of gas warfare was in the preparation of activated charcoal.

For this development the ground was already being prepared, in a small way, by the technical departments of some of the provincial universities. A notable example was at Sheffield, where the tradition in the cutlery industry had been strongly individualistic. The University's Department of Applied Science made itself the centre of co-operation between some of the more enlightened firms, so that when in 1920 the British Cutlery Research Association was founded under the D.S.I.R. scheme, it was able rapidly to develop a programme which was already in 1921 bearing useful fruit.[2] In the glass-making industry, too, Sheffield University was giving a lead and was finding the manufacturers ready for organised research—research that had an important place in the supersession, by automatic and semi-automatic machinery, of the old laborious methods.[3] The textile research associations of Yorkshire also found inspiration and practical help in the local universities and technical colleges. In the foundry trades, where old methods were dying hard, research meant the co-operation of the research associations with the National Physical Laboratory (a D.S.I.R. establishment) and the Universities of Birmingham and Sheffield and University College, Swansea. In other cases the work was organised by established technical organisations—the Institute of Mechnical Engineers was carrying out research on cutting tools and on steam-nozzles, for example, while the Institute of Metals had a " Corrosion Sub-committee," whose annual reports bear witness to co-operative effort over a long series of years.

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[1] This passage is based on the D.S.I.R. Memorandum on *State Assistance to Research in Industry*, in *Factors in Industrial and Commercial Efficiency* issued by the Committee on Industry and Trade, 1927 (pp. 305 *et seq.*).

[2] *E.g.*, a machine, made to the Research Association's order, for boring tang-holes in knife handles. This machine, operated by girls, gives perfectly uniform results, in contrast to the irregular products of the former highly skilled and dangerous work of men. (*T.T.S.* (B.I.F. Section) 26.2.21.)

[3] *T.T.S.* 26.3.21 and 4.2.22 (Industrial Yorkshire Section). Sheffield University was doing useful work on metal springs, the causes of failure in wire ropes, "creep" in metals, and low-temperature carbonisation (*T.T.S.* 12.12.31).

Parallel with this development of organised co-operative research, there was decided growth of private research inside or on behalf of individual firms. In 1925[1] it was said of the steel industry, " all the great works have laboratories where problems incidental to their own branches of trade are dealt with. The Brown–Firth laboratories [where the early work on stainless steel was done] are good examples of individual initiative in this connexion." In 1934 the United Steel Co. at Sheffield opened a huge central research department at Stocksbridge. Progress in diesel-engine design was largely the result of " painstaking researches of many individuals in private experimental establishments and technical colleges." [2] In the chemical industry revolutionary changes—the extension of electrolytic methods, the use of very high and very low temperatures, the great increase in the use of solvents and of catalysts—were resulting from private industrial research, often developing from fundamental research in the university laboratories.[3] Apart from these rather special cases of steel and chemicals, where the industrial concerns were unusually large, purely private research did not get much publicity. It was the work of the industrial research associations, often on the basis of fundamental research in D.S.I.R. establishments or universities, that naturally found its way into Press reports. It is difficult for anyone outside industry to judge how far the weight thus given to co-operative research fairly represents what was happening. Results—for example, the improvement of the petrol-engine—are evidence of a great deal of private work going on inside the individual firms. The willingness with which the work of the research associations was promoted is itself evidence of a disposition to rely rather on scientific research than on the old rule-of-thumb methods. It would be strange indeed if this disposition (of which there is also a good deal of independent evidence) did not manifest itself inside the firm (especially the engineering firm) as well as round the table of the research association or the technical institute.

We can conclude that there was during the period a great growth of scientific research into industrial problems, that this growth had its immediate origin largely in government policy in facilitating the use of industrial research associations, and that there was also, inspiring the whole movement, the spread of a more scientific attitude in both new and old industries. This industrial research was getting important results, improving the products of industry, reducing the burden of disagreeable manual work and strengthening the competitive position of British exporters. But we must be cautious in this last conclusion, for, although there was a very marked change in Britain, it was a movement in which Britain was late in the field, and in 1927 the Balfour Committee was obliged to point out that British expenditure on organised industrial research was completely dwarfed by figures from the United States and Germany.[1] Quantitative comparisons perhaps exaggerated the difference—it is difficult to overestimate the importance, to the whole metallurgical field, of the work done by a handful of men in the private research establishments of the Sheffield steelmakers; and Britain was at any rate in this period making a conscious effort to remedy her shortcomings.

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[1] In *T.T.S. Annual Engineering Review*, 24.1.25.

[2] *T.T.S.* 3.36 (Diesel Power Section). Marine-engineering firms were already deep in research on diesels in 1920 (17.12.21, Engineering Supplement).

[3] *T.T.S.* 9.37.

This research effort was guided along lines determined sometimes by the emergence of a new demand (frequently itself the result of the cheapening of a complementary good), sometimes by the sharpened competition of an alternative good, sometimes by the expensiveness of a material (fuel economy was one of the important stimuli in these years) and occasionally (in the chemical industries) by argument from fundamental principles. Where chance did have some part in determining the course of invention it was because it revealed the possibilities of achieving an end for which there was an obvious demand. Although perhaps the phrase " Necessity is the mother of invention " gives too simple a view, at least we can say that in the inter-war period the course of technical improvement was in large part dictated by market conditions. The following paragraphs indicate some examples of the influence of various market conditions in particular cases.

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[1] *Factors in Industrial and Commercial Efficiency*, pp. 318 *et seq.* In 1929 the Balfour Committee could still be highly critical of the industrialist's attitude. Cf. the following strictures from p. 218 of its *Final Report* (Cmd. 3282 of 1929): " Before British industries, taken as whole, can hope to reap from scientific research the full advantage which it appears to yield to some of their most formidable trade rivals, nothing less than a revolution is needed in their general outlook on science; " and, ". . . in our opinion it is the imperfect receptivity towards scientific ideas on the part of British industry which is at the moment the main obstacle to advance, and a change in this attitude would open up prospects of development which are at present beyond the range of possibility." Newspaper reports in the 'thirties suggest that these strictures would have been much less just in 1939.

Necessity's motherhood is seen in its most simple form when the normal method of satisfying a demand has become unusually expensive and a cheaper substitute is sought. It was in this way that the successful search for synthetic menthol began,[1] and the high price of natural perfumes stimulated the evolution and production of synthetic perfumes by British manufacturers.[2]

The influence of the final consumer's desire for some advantage not previously enjoyed at all is exemplified in the woollen industries, which for a very long time sought to make woollen goods proof against shrinkage. Eventual solution of the problem came after prolonged laboratory work, when it was found that in narrowly limited conditions an effective process could be used. " Unshrinkable " woollens arrived, that is to say, partly because people had always wanted them, partly because a scientific attack on the problem was made and partly because the inter-war industrialist began to appreciate the possibilities of accurate control of processes and conditions.[3] More frequently demand showed itself as a final producer's demand for a solution by the engineers of new or old problems in the factory. Here again examples are afforded by the textile industries. Of the relatively few changes in textile machinery during the period, most were in one way or another connected with the adaptation of machines to suit the properties of artificial silk.[4] New solutions for older textile problems were also being found : in 1925 a new heavy loom extended the range of cotton cloths that could be made on a large scale.[5] The technique of road construction was revolutionised because the motor car tore the roads to bits, and the motorists called for more and better roads; but it is notable that the new technique exploited the recent advances in electrification, in machine tools, in the chemical industries and in many other directions. The new chemical processes, and particularly their new scale and the new emphasis on accurate control of product content, presented the chemical engineers with more imperious demands for plant that would resist corrosion and heat, and so helped to give direction to the search for new metal alloys.[6] The chemical industries were making substantial progress (by the development of organic solvents such as trichlorethylene) in dealing with the degreasing problems involved in electro-plating and other new metal finishes.[1] In the development of new paints the researches depended on such a mixture of influences—consumer demand for better finish, new raw materials, new chemical knowledge of the properties of organic substances—that it is difficult to say which factor predominated.[2] Of the multiplicity of "special steels" developed in the 'thirties it is easier to speak in simple terms: the general principles of using small additions of minor elements for getting particular results were established, and it was just a matter of evolving the particular combination of properties demanded for a particular use. A nickel–chromium steel wire was evolved for electric cookers, a nickel–manganese non-magnetic steel for turbo-alternators, another to stand the severe abrasion in mining machinery, and a host of special-purpose steels for the manifold demands of the new motor industry, for example.[3] In machine tools, the broad possibilities of improvement depended on the employment of the new steel, of welding, of ball-bearings and of electric power, and the prototypes remained few; but the derivatives were exceedingly numerous,[4] being adapted to the particular jobs to be done in particular branches of new and old industries. In work on steam-engines, the main incentives were, as we shall see, the competition of alternative engines and the desire to economise fuel, but in various details progress in one direction would demand progress in another. The full exploitation of vacuums by the steam-turbine and the greater interest in thermal efficiency, for example, led to closer study of the principles involved in condenser design and other parts of the work, and a gradual improvement in these directions.[5]

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[1] *T.T.S.* 16.2.24. [2] *T.T.S.* 1.11.24.

[3] *T.T.S.* 10.39 (Wool and Wool Textiles Section).

[4] *T.T.S.* 13.8.27; 25.2.28 and especially 17.12.24. Artificial silk called for " comparatively gentle treatment," and many changes in winding and other machinery were consequent upon this.

[5] This invention came from a young engineer who claimed that his success was because of his " newness " in the field " and the fact that he was not obsessed by tradition have enabled him to plan a new type of loom construction from the floor up " (*T.T.S.* 13.6.25; see also 3.10.25).

[6] *T.T.S.* 12.1.29, 21.2.31 (B.I.F. Section).

Sometimes the stimulus to improvement came not from a new demand but from the threatened loss of market to an alternative supply. The outstanding example of this during our period is provided by the steam-engine, where the competition of internal-combustion engines—particularly the diesel engines—stimulated improvement. A multitude of minor changes, applying long-established principles, were responsible in the 'twenties for results which "would have been thought impossible a few years ago, and which would presumably never have been attained had it not been for the ever-increasing competition of the internal combustion engine." Significantly the writer of these words went on to say: "These developments have spurred on the designer of oil engines to further effort . . ."[1] It was the stimulus of competition that kept the three main types of marine engine—the diesel, the steam turbine and the reciprocating steam-engine—in a neck-and-neck race through most of the period. Similarly in communications—the competition of radiotelegraphy awoke the cable companies to the importance of improvement, and stimulated experiments in 1920–24 which evolved the new type of cable laid from 1924 onwards.[2]

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[1] *T.T.S.* 3.9.33.

[2] *T.T.S.* 30.4.32 (British Industrial Paints Section).

[3] Article, "Metallurgist and Industry," in *T.T.S.* 10.35.

[4] *T.T.S.* 18.7.25.

[5] *T.T.S.* 18.7.31.

In accounts of the advantages of improved equipment, fuel economy (generally meaning coal economy) looms large. At first sight this is a little odd, since the period was one of surplus capacity in coal production and through most of it coal was not extraordinarily dear, relatively to the general movement of prices.[3] But interruption of supply by labour disputes gravely inconvenienced users in the 'twenties, and the physical size of the stock necessary to protect an industrial consumer say from a three-months' coal strike was a quantity which justified a search for ways of reducing the rate of usage. Another factor was the desire to reduce the heavy and disagreeable (and therefore increasingly expensive) work of stoking boilers. The smoke-abatement movement also operated, for technical reasons, as a movement for fuel economy.[4] Lastly, the coal-economy movement derived some of its force from the competition with oil fuels: one of the principal advantages of the motor-ship was the relatively small space needed for fuel, and the reciprocating and turbine engines using coal could hope to hold their own only if by fuel economy they could release space for more cargo.[5]

In exceptional cases, in the chemical industry, the lines of research were set by the appreciation of the implications of newly established fundamental principles. This was a long business.

> "Theoretical calculations indicated that in many operations the utilization of high pressures would render the

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[1] *T.T.S.* 26.1.29 (*Annual Engineering Review*).

[2] *T.T.S.* 17.7.26.

[3] Coal prices: Best steam Newcastle, end of 1913, 15*s.* a ton; 1920, 42*s.*; 1924, 29*s.*; Durham Best Gas, end 1924, 22*s.*; 1929, 16*s.* 9*d.*; 1935, 14*s.* 10*d.*; 1938, 18*s.* 10½*d.* In the latter part of the period, "high fuel costs" were more frequently given as justification for fuel-economising innovations (see, *e.g.*, article on Engineering Group at the British Industries Fair, *T.T.S.* 3.38).

[4] See notes on a Birmingham exhibition, *T.T.S.* 11.9.26.

[5] The importance attached to fuel economy may be gauged from the frequency with which it is mentioned as an incidental advantage of other innovations, as, *e.g.*, when ball-bearings were adopted in the heavy plant of railway workshops, and in wire-drawing mills (*T.T.S.* 20.1.23 *Annual Engineering Review*).

> technical synthesis of a number of important substances feasible. . . . Ammonia and methyl alcohol are good examples . . . in both instances just a decade elapsed between the beginning of the theoretical attack and research laboratory experiments and the operation of the first industrial unit, the periods being 1903–13 for ammonia and 1913–23 method alcohol synthesis." [1]

So originated the processes of the great Billingham works. The general idea of the use of catalysts was more and more widely applied in the industry. Similarly with the use of extreme conditions of temperature and pressure—though it must be remembered that these processes depended upon few feats in chemical engineering rendered possible only by the new metallurgical products.

Direction of research, towards ends that were for one reason or another desired, did usually bring results—even though, as with the chemical processes just mentioned, it might take a long time. But success did not invariably come. In textile machinery it was noted in 1925 that over a long period there had been innumerable patent applications evidencing expenditure on unsuccessful attempts to deal with a single problem.[2] An examination of the patent records would no doubt reveal many other examples of " the elusive invention."

While Fate sometimes seems to have set its face against a solution of a technical problem, it is equally true that pure chance often accelerated technical progress. The outstanding instance during this period was in the bleaching of wool, where chance circumstances almost overnight presented the industry with a solution of the problem of " yellowing " of wool by atmospheric action after bleaching by the old processes. The story is worth quoting at length : To the Wool Industries Research Association—

> " a hosiery manufacturer submitted for examination a lady's jumper, the front of which had faded very badly, although the dyestuff had been scheduled as fast to ordinary conditions of wear. The purchaser had worn the jumper while carrying out her ordinary household duties, which had included cooking with a gas-stove. It was found that the fading of the dyestuff was due to the sulphur dioxide from the burnt gas combining with the dyestuff to form a compound lighter in colour than the original dyestuff. . . . A more detailed examination of this problem showed that the formation of these compounds between dyestuffs and sulphur dioxide

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[1] *T.T.S.* 24.11.28 (International Chemical and Allied Industries No.). Also 11.7.31, which includes notes on the Society of the Chemical Industry's Jubilee Exhibition and a review of Miall's *History of the British Chemicol Industry.*

[2] *T.T.S.* 16.5.25.

> only occurred when a critical amount of alkali was present, the concentration of alkali at which the formation of these additive compounds was possible being described as the active range. . . . Of wider interest . . . was the application of this discovery to the bleaching of the natural colour of wool, which, by a suitable adjustment of conditions, was successfully accomplished. The bleaching so produced was found to be permanent to washing. . . ." [1]

And this is why nowadays white woollen goods do not " yellow with age " comparatively quickly as they used to do. The entire combination of factors that was at work in this case is worth noticing. There was " servicing " by the manufacturer, in the sense that a consumer's complaint was automatically made the subject of investigation. The problem was referred to the industry's research association—one of those sponsored by the Government scheme. Thoroughly scientific work followed, and the principles established about fading (as a fault) were applied to a very old problem of bleaching (as a desideratum). The eventual process depended upon careful control of conditions and quantities—it was dependent on the new regard in which accurate measurement was held. Thus, although the innovation of " permanent whiteness " began with the chance action of a lady in a coloured jumper leaning over her gas cooker, the incident would not have had its beneficial results had there not been a scientific attitude, a research organisation and a recognition of the advantages of precision in industrial operations.

Economists have often wondered whether the prizes held out by boom conditions or the attempts to reduce costs during the slump more powerfully stimulate technical progress.[2] To compare the frequency of invention in booms with that in slumps would be idle without an extraordinarily detailed knowledge of events, and I have no pretensions to such support for any generalisations. The writers in *The Times Trade and Engineering Supplement* showed no awareness of academic interest in this question, but there were rare occasions when the connection between general trade conditions and the pace of technical change was briefly mentioned in the *Annual Engineering Review*. In 1921 and 1922, and again in 1933 and 1934, the effect of depression was, it appears, to retard progress. The pressure to minimise cash expenditure made firms avoid costly experiments. A good deal of quiet work on partially established lines would be going on in the drawing-offices, but new designs could not be tried out until trade revival brought new orders. This last point is more important than perhaps appears at first sight, since so much of technical improvement comes from the detection of disadvantages when previous ideas are applied to practice.

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[1] Quotation from *T.T.S.* 10.36 (West Riding Section).

[2] Two important contributions to the discussion are " The Economic Theory Concerning Patents for Inventions," by Sir A. Plant (*Economica*, 1934, p. 30) and *Some Statistics of the Industrial Revolution in Britain*, by Professor T. S. Ashton (Manchester Statistical Society, 1948).

I have no such clear indication of the effect of boom, but the *Engineering Review* of 1937 (published in January 1938) is comparatively bare of new developments, the outstanding exception relating to the catalytic processes converting hydrocarbon gases —which was the fruit of many years of experimental work. In machine tools and other fields where the gestation periods of successive small changes were relatively short, prosperous 1937 was singularly unprogressive. 1929 also appears to have lacked great change, but the stress laid (by the *Engineering Review* of the year) on the spread of scientific measurement and control, although mainly an indication of trend, makes one sceptical of the view that meticulous review of costs is confined to the depression years.

If one is to build up some rash generalisation on the basis of these notes, the upshot might be put like this. At the bottom of the slump the pressure to cut total expenditure (not only by cutting unit costs) tends to restrict the commencement of new lines of inquiry and experiment. Work previously in progress is to some extent allowed to continue, especially if it shows signs of early fruit, and when fruit appears it is greedily plucked in the general effort to reduce costs. Completed new designs have to wait for the hard test of practical application, and since the proved oversights of yesterday's inventor provide the most fertile ground for to-day's inventor, new ideas are likely to be rarer in this extreme phase of slump than at any other time. Once revival appears, the enterprising firm is prepared to take a rather longer view, and will entertain laboratory projects to bear fruit next year rather than next month; and at the same time the implementation of the newest designs gives fresh knowledge and fresh stimulus to the inventor. In the boom these factors may still be strong, but the ease with which established methods reap profits perhaps dulls the edge of the business man's appetite for the inventor's ideas, though major results of maturing long-term experiments may be more likely to achieve their practical ends at this time than at the other extreme of the trade cycle. If this tentative view is at all near the mark, it perhaps implies that the world gets on best when trade is pretty good yet not exactly booming—a conclusion we can reach easily enough when we are looking from other angles.

In these ways the course of technical progress is affected by the trade cycle. That the course of technical progress in turn effects the course of the trade cycle is a notion that has had considerable attention in the theoretical studies of the trade cycle. In the inter-war period there was no spectacular force comparable to the railway inventions which dominated certain mid-nineteenth century booms. The motor car did not have the importance in Britain that it did in the U.S.A., where directly and indirectly it was one of the most powerful forces in the 1929 boom. The most that can be said for this particular factor is that, combined with cheap money and redistribution of the population, it helped to promote the housing boom that dominated the revival in the middle 'thirties. The new developments that made rather a splash (especially in the capital market) in 1927–28 —films, greyhound racing tracks, artificial silks, and plate glass— did not absorb any substantial amount of real resources.

While, therefore, the part played by new invention in promoting the booms was much slighter in this period (at least in Britain) than it has often been, it so happened that invention moderated both the major slumps. In the first slump—and to some extent throughout the period—shipbuilding activity was saved by the technical changes both in methods of propulsion and in hull design. In 1921 Britain was obviously overstocked with ships, most of which could be expected to be usable for many years to come : it was difficult to believe that there could be any profit in shipbuilding for years ahead. The volume of building was indeed never sufficient to occupy the yards fully, yet there was always some building, and this was because the technical improvements made total costs of new ships less than the running costs of old ships. Another important instance of this was the Sheffield steel industry, which in 1930–31 would have been in an even sadder state had not the new stainless steels been so attractive that they were worth producing even at the bottom of the slump.[1]

Occasionally the pace of technical progress makes for less, not more, immediate investment. There were times, between the wars, when marine engineering was changing in such a rapid yet uncertain way that firms in the highly competitive shipping industry delayed investment in the replacement of old high-cost engines by the new low-cost engines. In the middle 'twenties progress was rapid in all three propulsion methods—the reciprocating steam-engine, the geared steam-turbine and the diesel motor. Minor variations are said to have brought the number of possible combination types up to nearly a hundred. For some classes of ships there was momentarily very little to choose between several of these combinations, and shipowners were inclined to postpone placing orders until a little more experience and perhaps further invention had shown which types would be holding the field over the next ten years. Put in economic terms, the shipowners' position was that, though total costs of new engines might already be less than running costs of old engines, the profit on engines of 1923 build might be wiped out by the appearance in 1924 of even lower-cost engines, the purchase of which would allow a competitor (who had postponed the decision) to cut freights further. Also there was uncertainty as to which of two types of 1923 engine would prove to work at lower cost. If shipowner A installed engine X, and shipowner B installed engine Y, whose costs in 1923 appeared to equal those of X, a year's experience might show that in fact Y costs were much lower than X costs, in which event shipowner A would have done better to wait until 1924 before installing new engines.[1]

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[1] *T.T.S.* 22.8.31.

No doubt many industries could provide examples of this phenomenon, but I have found no other mention, and the chances are that the marine-engineering case was the most important of its kind. It did not operate at the bottom of the slump, but mainly in the revival years. In general, therefore, we may say that technical progress moderated slumps in two of their blackest spots—in shipbuilding and the steel industry, and that it did relatively little to exaggerate the booms. It will be appreciated that this generalisation relates only to Britain between the wars—of some other periods and some other countries it would be far removed from the truth.

Complicated interaction between one factor and another is by no means peculiar to the trade-cycle aspects of technical change. If I were asked to name the two technical developments that did most during this period to transform the British economy, I should probably name the internal-combustion engine and electrification, both of which originated back in the nineteenth century; while the most far-reaching change falling mainly within the period was perhaps the new alloy metallurgy beginning (before 1914) with manganese and stainless steel. But any attempt in this way to isolate particular factors is artificial and indeed misleading. Many of the innovations mentioned in these pages were apparently trivial, but it is not only as examples that they call for mention: change in one direction depended so greatly on change in another. As an excursion in economic history, this inquiry has to myself served to emphasise the idleness of much talk of simple cause and effect in the development of an economy. Again and again I have been reminded of one of Marshall's analogies from the physical world—like the equilibrium forces of which he wrote in Book V of the *Principles*, the relation between one force and another in the processes of technical change is a mutual one, as "a number of balls resting against one another in a basin." Not, of course, that the "resting" amounted to "stagnation."

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[1] Since the above was written I have had the benefit of reading Mr. Shackle's *Expectations in Economics* (Cambridge, 1949), Chapter III of which includes an elegant analysis of just such circumstances as those described in the above paragraph.

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THEORIES OF THE 1937–38 CRISIS AND DEPRESSION

THE most recent severe crisis and depression to strike the economy of the United States was that of 1937–38. The rally to the upper turning point of 1937 began with the demise of the N.R.A. in May 1935 and continued at an encouraging rate for approximately two years. At various times during this period, May 1935 to September 1937, specific governmental policies and legislation either retarded or stimulated the recovery: for example, legislation in labor leading to vigorous labor-organising activities; agricultural subsidies; large rearmament programs abroad; huge gold inflows leading to sterilisation of gold; and silver purchases on an international scale. In addition, we had public-works and government-employment programs, deficit spending by government coupled with enlarged bank purchases of the growing federal debt, a veterans' bonus, intensive governmental manipulation of monetary policy, rigorous regulation of security markets and heavy taxes on undistributed profits.

Explanations of the 1937 upper turning point have been abundantly provided in the past decade, but none seem to account satisfactorily for the possible and probable interplay of the complex forces which would appear to be implicit in the above-mentioned policies and legislation. The most satisfactory procedure indicated at this time, seemingly, is to analyse critically several of the more representative theories of the 1935–38 rally, crisis and depression in order to prepare a perhaps more accurate theoretical groundwork for the more positive propositions which the future at least promises.

II

The Increase of Reserve Requirements

The action taken by the Board of Governors of the Federal Reserve System (under powers granted in the Banking Act of 1935) in doubling member-bank reserve requirements between August 15, 1936, and May 1, 1937, is frequently cited as a strategic causal force operating in the direction of over-deflation by the midsummer of 1937.

Professor John P. Wernette writes:

> "Some excess reserves are a prudent necessity . . . banks, on the average, had [May 1937] only slightly more

> than 10 per cent more reserves than required by law. A banker whose actual reserves exceeded his required reserves by only one tenth, and who does not wish to borrow may well hesitate to expand his loans and investments. The expansion of loans and investments, and deposits, which had been continuous for several years, ceased in December, 1936, and contraction set in." [1]

Professor Wernette avoids dogmatism, however, and concludes that budgetary policies were also of importance in explaining the reversal.

Professor Norman J. Silberling, after noting that the government decreased its net contribution to the flow of income, declares that the government ". . . also took action . . . to tighten credit by drastically increasing member bank reserve requirements. The combination of these two policies produced an almost overnight shrinkage in business activity, one of the sharpest, most violent recessions in our history." [2]

Professor Donald M. Marvin lists the doubling of reserve requirements as one of the three principal measures which induced the 1937 deflation.[3] Sterilisation of new gold and sales of government securities were the remaining deflationary measures enforced by the financial authorities, according to Dr. Marvin.

R. C. Leffingwell cites the inflow of foreign funds and the soldiers' bonus as promoting inflation in 1936, but " The authorities, fearing inflation, adopted drastic deflationary measures. They sterilized gold imports and raised reserve requirements. . . . There resulted . . . one of the most abrupt, precipitous, and unnecessary depressions in our history." [4] The President's announcement that some prices were too high, curtailment of government purchases and the near-balance of the budget are listed as collateral causal factors by Mr. Leffingwell.

An examination of the money and capital markets of the period under review indicates that Professors Wernette, Silberling and Marvin and Mr. Leffingwell have tended to emphasise unduly the importance of increased reserve requirements. There was no shortage of money or credit in either the money or capital markets at any time between 1934 and 1939. The steadily falling money rates furnish adequate proof of this statement. There was a progressive decline in commercial-customer loan rates from 3·45% in 1934 to 2·53% in 1938. Prime commercial paper of four to six months maturity decreased from 1·35% in January 1934 to 0·75% throughout 1935, 1936 and early 1937, increasing to only 1·00% in April 1937 and lingering there for a full year. Stock-exchange call-loan renewals remained at 1·00% from June 1936 to the end of our period in December 1938. Twelve-year or over Treasury bonds returned 3·50% in January 1934, declined to 2·27% by December 1936 and averaged about 2·60% throughout 1937 and 1938. Corporate high-grade bonds (Moody's *Aaa*) were paying 4·35% in January 1934, then declined to 3·58% by May 1936. Revised figures from this last date reveal a low of 3·09% in January 1937 and a high of 3·42% in May of the same year. Federal Reserve Bank rates on rediscounts for, and advances to, member banks fell continually from January 1935, when the rates averaged from 2·00 to 3·00% (except for New York's rate of 1·50%), to August and September 1937, when final revisions reduced them to 1·50% for all districts except New York, where the rate was only 1·00%. There was no money shortage with rediscount rates at such remarkably low levels.

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[1] J. P. Wernette, *The Control of Business Cycles* (New York : Farrar & Rinehart, Inc., 1940), p. 182.

[2] N. J. Silberling, *The Dynamics of Business* (New York : McGraw-Hill Book Co., Inc., 1943), p. 355.

[3] D. M. Marvin and G. M. Williams, *Design for Recovery* (New York : Harper & Brothers, 1939), p. 78.

[4] R. C. Leffingwell, " Managing Our Economy," *Yale Review* (Summer, 1945), pp. 606–7.

Professor Marvin takes special note of the New York banks which he declares were "... faced by an acute shortage of money ... [hence] sold securities and initiated a major decline in security markets."[1] The rates on bankers' acceptances fail to substantiate Professor Marvin's charges since they reached 0·58% in April 1937, slipped to 0·44% in June 1937 and stood there throughout the remainder of the year. Stock-exchange call-loan renewals, the majority of which occur in the New York area, remained at 1·00% from June 1936 to 1939, and would have gone lower had they not been pegged at a minimum of 1·00%. Taking figures for New York City exclusively, the 1·00% rate on stock-exchange call-loan renewals is here indicated as is also the 1·25% rate on ninety-day stock-exchange time loans. These rates remained constant throughout the year, and customer-loan rates moved from a mere 2·50% in January 1937 to the 1937 peak of 2·53% in April, then down to the 1937 low of 2·34% in June. Four- to six-month prime commercial paper started 1937 at 0·75% and increased to 1·00% in March and April. Rates on ninety-day bankers' acceptances did double from January to March, but the March and April high of 9/16% is still extremely low. New Treasury bills doubled from January to April, and ninety-one-day Treasury bills moved from 0·17% in January to 0·56% in the like period. The fall in the price of long-term Governments can be seen in the yield increase of three- to five-year Treasury notes from 1·18% in January to 1·59% in April 1937. Low rates such as these preclude the possibility of a "money shortage."

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[1] *Loc. cit.*

It is true that some "institutional speculation" had been practised by the banks during the rise in bond prices from 1934 to 1936, but, as legal requirements increased, the banks as a whole were not short of reserves. Some of the great New York banks were low on reserves, but not "acutely," and they did not wait until March 1937 to begin selling bonds.

A study made in January 1937, just prior to the last announced increase in reserve requirements, revealed that only 3·00% of all member banks would need to undertake any operations other than to draw down their balances with correspondents in order to meet the increased requirements. Additional funds required to meet the increased reserve requirements by the Federal Reserve System as a whole totalled $123 million, of which $100 million was needed by the twelve money-market banks in New York City.[1] These banks, however, held a large volume of liquid assets, including Treasury bills and short-term notes, bankers' acceptances and brokers' loans.[2]

Early in August 1937 excess reserves of New York City banks had declined below $50 million, as compared with $200 million in May.[3] The cause of this decline was to be found in the substantial withdrawals of balances by country banks. To avoid pressure on the New York banks, the Treasury released $300 million from the inactive gold account in September 1937, and excess reserves of New York City banks immediately rose to more than $400 million.[4] Hence, the New York banks held an average of over $400 million in excess reserves during the "critical" days of March 1937, found excess reserves reduced to $50 million for a brief period in August (the August average was over $100 million) and finished out the remaining four months of 1937 with more than a $400 million excess reserve balance.

Interest rates remained strikingly low, and new corporate issues (to be distinguished from refunding issues) increased until the third quarter of 1937. In the first half of 1937, these new corporate issues totalled $812·0 million as compared with $454·6 million during the first half of 1936, and $734·4 million in the second half of 1936.[1]

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[1] *Twenty-fourth Annual Report of the Board of Governors of the Federal Reserve System* (Washington, 1938), p. 5.

[2] *Loc. cit.* [3] *Op. cit.*, p. 9. [4] *Loc. cit.*

Furthermore, reporting member banks in 101 leading cities did not hold back in their loans to customers and in their commercial-paper purchases. Total loans to customers increased steadily from the February 1937 total of $8,982 million to the September 1937 peak of $10,026 million, while purchases of open-market acceptances and commercial paper aggregated $379 million in January, $411 million in March and $468 million in September of the same year. One must conclude that these great banks continued to meet the demands of their customers.

For the federal-reserve system as a whole, excess reserves of member banks never decreased below the August 1937 low of $750 million, which was a far greater margin than had ever existed " before 1932." [2] Low money rates prevailed throughout the period; there was no money or credit strain.

Professor Schumpeter agrees with this conclusion, declaring: " . . . there was . . . no monetary strain," and again, " Monetary policy *per se* may, hence become a major factor in the near future; but it had but little to do with the prosperity of 1935 to 1937, and nothing with the subsequent slump." [3] Also, Dr. C. O. Hardy points to the enormous excess reserves, the low level of short-term interest rates and the strong market for bonds to document his assertion that there was no monetary stringency.[4] Mr. Winthrop W. Aldrich, whose testimony is especially significant because he was in a position to watch carefully the New York banks during the so-called " acute shortage of money," has said: " The causes for the recession cannot be found in monetary factors. The low levels of bank lending rates, which persisted despite the increases of reserve requirements and the continued sterilization of gold," gave definite " evidence that there was no credit strain." [5]

This accumulation of evidence [6] all points to the conclusion that the raising of reserve requirements was of no strategic causal significance in producing the crisis and depression of 1937–38.

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[1] S. H. Slichter, " The Downturn of 1937," *Rev. of Econ. Stat.*, Vol. XX (Aug. 1938), p. 103.

[2] C. O. Hardy, " An Appraisal of the Factors (' Natural ' and ' Artificial ') Which Stopped Short the Recovery Development in the United States," *Am. Econ. Rev.*, Vol. XXIX, Supplement, Part 2 (March 1939), p. 170.

[3] J. A. Schumpeter, *Business Cycles* (New York: McGraw-Hill Inc., 1939), II, pp. 1031–2.

[4] *Loc. cit.* [5] *Commercial and Financial Chronicle* (Jan. 8, 1938) p. 198.

[6] The writer has additional evidence to support his contention, but the need for brevity precludes its use.

The Sterilisation of Gold

Professor Marvin and Mr. Leffingwell include the phenomenon of gold sterilisation in their monetary explanation of the 1937 reversal. Included as one of his three basic causes, Professor Marvin characterised the sterilisation policy as " . . . unprecedented . . . at the beginning of a recovery," [1] and Mr. Leffingwell includes it as one of the basic " drastic deflationary measures " [2] adopted by our monetary authorities.

Our preceding analysis of the money and capital markets should remove most of the significance of the gold-sterilisation policy as a causal " measure," but additional facts may be cited. The greatest amount of gold ever present in the " inactive gold account " was the August 1937 sum of $1,335,700,000 as against a total monetary gold stock of $12,567 million in the same month. This meant that there still remained $11,231,300,000 of " active " gold, or more than there had been at any time in our history before December 1936. From December 1936 to September 1937, when $300 million gold was released from the inactive gold account, the amount of gold sterilised each month did not exceed the new receipts of gold. Hence there was $11,231 million of " active " gold in December 1936, when sterilisation began, and there was still $11,231 million at the peak of the sterilisation procedure in August 1937. Gold sterilisation did not encroach upon already existing gold stocks—it merely prevented further additions to the gold supply from being absorbed into the monetary base.

The Reduction of Federal Expenditures

Professor Wernette writes that the reversal of the budgetary policy was " . . . too rapid and too vigorous," [3] and that, while it might be merely a coincidence, the magnitude of the income-increasing federal expenditures began to rise rapidly in the spring of 1938, and business improvement set in shortly thereafter.[4]

Professor John Bauer claims that pump-priming exerted a positive influence on the recovery to 1937, but that as private production and employment began to diminish as the year progressed, and as dislocations and gluts appeared in early 1937, the government should have been ready, he writes, " . . . to furnish promptly additional employment, so as to maintain the needed flow of purchasing power to absorb the gluts. If it holds back, as in 1937, there will be further recession." [5]

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[1] *Op. cit.*, pp. 78–9. [2] *Op. cit.*, pp. 606–7. [3] *Op. cit.*, p. 183. [4] *Op. cit.*, p. 180.

[5] J. Bauer, *National Welfare and Business Stability* (New York: Harper & Brothers, 1940), pp. 60–3.

Professor Silberling ascribes basic causal significance to the government's reductions in its net contributions to the flow of income.[1] The government, having created a demand for goods and services *via* its spending program, withdrew much of that demand and thereby created the violent setback of 1937.[2] Moreover, war-goods orders contributed to this demand, and " . . . when these politically sponsored disbursements were suddenly cut off 'to prevent inflation,' one of the most severe recessions in our history naturally followed." [3]

Professor Schumpeter is another who acknowledges that the income-generation policies of the New Deal were effective. As to the timing of the injections, Schumpeter adds that the greatest amount of pump-priming came at the time when the economic process could most easily have done without it, and its cessation came during the most sensitive phase of the recovery process.[4]

> " The obvious inference," he says, " is that the collapse induced by the cessation of income generation was so severe, and that the jolt which it would in any case have been natural to expect turned into a slump, because under the surface watered by income generation the processes characteristic of recession in our sense failed to work as they always had worked before. The parachute refused to unfold." [5]

Turning now to a critical evaluation of these postulates relating to the net contribution of the federal government to national purchasing power, we may agree that undoubtedly the war-bonus payments did exert some effect upon the rise in the wholesale price-level after June 1936. Wholesale commodity prices, which had been lingering around the 79–80 area for over twenty months prior to August 1936, increased to an index of 88 in the ensuing nine months. Some of this rise was undeniably due to government contributions to purchasing power, but a great deal of the increase was precipitated by the speculative rise of raw materials and the higher cost of labor. Moreover, there is no reason to believe that consumer purchasing power suffered any net depressing effect, because even though emergency government labor employment decreased from 3,735,000 workers in March 1936 to 1,974,000 by September 1937, private employment more than offset the decrease, as total unemployment decreased from 8,883,000 workers in March 1936 to 5,066,000 by September 1937, and total employment in the like period increased from 43,336,000 to 48,083,000.[1] Factory payrolls increased from an index of 80 to 104 over the same months, while factory employment increased from 93 to 107. The national income received by individuals was $69·4 billion in 1937 as compared with $65·2 billion in 1936 and $56·3 billion in 1935. With factory payrolls holding at an index of 105 throughout October 1937, and factory employment at 101 throughout November, one cannot well argue that the decrease in government expenditures (caused chiefly by the decrease in government emergency labor employment) was of prime importance in explaining the down-turn which started in late August 1937.

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[1] *Op. cit.*, pp. 355–6.
[2] *Op. cit.*, pp. 356–7.
[3] *Op. cit.*, p. 438.
[4] *Op. cit.*, p. 1032.
[5] *Loc. cit.*, pp. 1031–2.

Professor Bauer's point relating to the timing of government employment deserves an added mention, inasmuch as he claims that gluts appeared in the " early months of 1937 " [2] and implies that the government was tardy in waiting until October 1937 before increasing its emergency labor rolls. However, only a few of the most discerning businessmen [3] were retrenching in the " early months of 1937 " as evidenced by the circumstance that the index of industrial production was 116 in February 1937 and 117 in August, factory employment was 106 in February and 109 in August, and factory payrolls increased from 100 to 108 in the same period. New orders for manufacturing industry held up well through March 1937; shipments reached their high for the 1930–39 period in the first quarter of 1937, and fell but slightly throughout the second quarter. We must conclude that the " Labor Administrator " would have been wise indeed had he rapidly increased government labor employment in " early 1937 " when private employers were absorbing enough men (in spite of the actual curtailment in government employment) to increase total employment from 45,257,000 in February to 48,083,000 by September. Total unemployment decreased from 7,574,000 to 5,066,000 over the same months. As emergency government labor employment decreased by 1,861,000 workers from March 1936 through September 1937, private employment of workers in the same period increased some 4,747,000, and unemployment decreased by 3,817,000.

These last figures indicate the nature of the actual attack made against the forces of depression by government officials. Most " Labor Administrators " would have increased government labor rolls only when positive evidence was available to prove that private employment was "drying up." This is precisely what did occur—the dovetailing of private employment and emergency government employment was perfect. When private employment began increasing in March 1936, the government gradually reduced its employment from the March 1936 high of 3,735,000 to 1,974,000 in September 1937. When total private employment began tapering off in October 1937, and especially in November (as evidenced by the increase in total unemployment from the September 1937 low of 5,066,000 to 5,691,000 in October and 7,175,000 by November 1937), the government "promptly" increased its emergency labor employment from the September 1937 low of 1,974,000 to 2,040,000 in October; 2,060,000 in November; 2,151,000 in December 1937; 2,352,000 by January 1938; and 3,552,000 by July 1938. Thus the government did exactly that which Dr. Bauer would advise, and yet the depression struck with almost unprecedented fury. The policy of taking government action in "early 1937" would have involved an "overlap" rather than a dovetailing of private and government employment—we have in the state no oracles of the calibre necessary to perpetrate successfully such legerdemain.

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[1] *Conference Board Economic Record*, National Industrial Conference Board, Inc. (March 20, 1940), p. 86.

[2] *Loc. cit.*

[3] Some retailers and manufacturers of clothing were retrenching in March and April 1937.

The Accumulation of Inventories

Alvin Hansen's theory of the 1937 recession develops in part along the lines of inventory accumulations. It might be called an inventory crisis. He notes that, historically, recessions have been characterised as due in large part to inventory accumulations, and that this particular inventory inflationary boom collapsed in March 1937.[1]

Critically examining this theory, we find that our indices reveal a steady increase of inventories from a stabilised plateau of 98 (1936 = 100), lasting from the fourth quarter of 1935 through the second quarter of 1936, to a peak of 147 in the third quarter of 1937. From this point the dissipation of inventories was gradual and struck bottom during the third quarter of 1938. New orders fell from their 1936 third quarter high of 171 to 112 in February 1937 and to an average of 140 for the first quarter of 1937. This index eventually fell to 72 by the fourth quarter of the same year, then increased. Shipments increased through the first quarter of 1937, then slowly eased downward until the precipitous fourth quarter drop from 109 to 89.

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[1] A. H. Hansen, *Full Recovery or Stagnation ?* (New York: W. W. Norton & Co., Inc., 1941), pp. 269–71.

It should be noted that the index of industrial production was 116 in February 1937 and 117 in August, while factory employment was 106 in February and 109 in August 1937. Thus industrial production maintained its high level for four or five months after new orders and shipments had begun decreasing. This explains the inventory accumulation which reached its high in the same quarter as industrial production—the third quarter of 1937—after which both fell during the ensuing nine months. Production was maintained either by work on old orders or by producing for expanding inventories. Goods were not being sold rapidly enough, and instead were piling up in inventories, because "evidently," between the end of 1936 and the second quarter of 1937, ". . . there was strong consumer resistance to higher prices and a serious misjudgment of markets by merchants." [1] Consumers did not lack purchasing power in the first eight months of 1937, for the reason that the retail value of the output of consumers' goods increased 14·7% from the first quarter of 1936 to the third quarter of 1937, while non-agricultural labor income was increasing 19·7%, and agricultural labor income still more.[2]

Professor Slichter argues that in September 1937, inventories were large relative to new orders, and managers feared capital impairment from inventory losses. Managers were sensitive because of capital losses suffered during the preceding depression, because overly large dividends had been forced by the undistributed-profits tax in 1936, and because the general level of profit margins was so low that ". . . most enterprises were out of the red by only a small margin." [3]

Dr. C. O. Hardy thinks the inventory slump did not consist merely in the liquidation of stocks that had not been subject to cyclical over-expansion. The expansion of inventories from 1936 to the first half of 1937 was estimated at the theretofore unequalled figure of $5 billion. Thus, during the upswing, inventories were built up so far beyond the needs of business that correction of such an over-extension involved a sizable curtailment of production. The over-extension was based upon such aberrant factors as price advances, anticipated price advances due to the war scare (the Spanish Civil War) and the condition of the labor market. When the pressure for higher labor costs diminished, the ". . . price incentive to maintain these expanded inventories fizzled out, and the correction of the speculative inventory position must have been an important factor in determining the magnitude of the slump." [1]

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[1] S. H. Slichter, *op. cit.*, p. 102.

[2] *Loc. cit.*

[3] *Op. cit.*, pp. 100–1.

Considering, now, other inventory items we find that finished goods were produced in large quantities in the first eight months of 1937, but inventories increased because consumers were not buying the products at a commensurate rate. Professor Hansen apparently makes no mention of it, but the present writer believes the resistance stemmed in part from the fact that re-employed wage-earners were paying down debts, and were saving more out of current income than formerly. People saved approximately $3 billion as their incomes increased $9 billion from 1935 to 1936. From 1936 to 1937, however, savings increased $2,300 million, with only a $4,200 million increase in incomes. As the savings increased out of current income, the tendency would be for consumer spending to fall short of the amount necessary to cover the selling prices of goods, the production of which resulted in the payment of a great share of that current income. The finished goods might not sell at a rate equal to the rate of their production. The people who saved from 1936 to 1937 were probably recalling the hard days of the early thirties, and their savings increased as their purchases failed to keep pace with output—consequently, inventories accumulated.[2]

The Decline of Consumption

At least two authorities have attributed causal significance to the corollary of the inventory accumulation thesis—specifically, the decline of consumption expenditures. Dr. Hansen has written: "'Consumption,' says the December, 1937 *Federal Reserve Bulletin*, 'was maintained.' True! But the villain in the piece may nevertheless have been consumption. For when consumption ceased rising, investment declined." [3] The investment which took place was closely geared to consumption—when consumption reached a plateau, investment fell more promptly than if it had been directed to a more distant point in time. The reaction in consumption led to a greater reaction in investment *via* the principle of acceleration.[4]

Professor Bratt notes that in 1937 little support was forthcoming from activities involved in completing capital equipment, because these activities were at an extremely restricted level. Thus, any decline in consumer purchasing power tended to result in an exaggerated reduction in credit purchases, especially if consumers did not have ready access to additional sources of credit. Dr. Bratt's conclusion is :

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[1] Hardy, *op. cit.*, p. 179.

[2] More will be said about this matter in the final section of the paper.

[3] *Op. cit.*, p. 274.

[4] *Loc. cit.*

> " When activity is dependent upon the purchase of consumers' durable goods to an abnormal extent, as it was in 1937, smaller purchases can result in a disproportionate decline. This becomes doubly important because rapid declines in purchasing power in turn quickly restrict the purchase of consumers' durable goods." [1]

Now one may agree that an expansion of investment in the form of machines to make goods or other machines, to build transportation facilities or to construct power equipment may come to a shocking end when demand for consumers' goods tapers off or slows down in its rate of increase; the retrenchment takes time, but is oftentimes of great magnitude. However, in addition to the fact that new security issues increased sharply from the astonishingly low levels of early 1935 to relatively high levels in late 1936 and through 1937 until the stock market broke, the situation was different in that investment expenditures consisted largely of consumer goods (durable and non-durable), semi-finished goods and raw materials accumulation. This may lead to a more prompt reaction of investment to consumption, but certainly not of the same magnitude. There is no long period of gestation; there is not the degree of acceleration and consequent deceleration which marks higher, producer goods retrenchment at the time demand for consumers' goods levels off. The degree of acceleration is greater on durable goods with long life, and in instances where the ratio of capital cost to total cost is high. This was not the case in 1937. In addition, the acceleration principle doesn't operate until fixed capital is rather fully employed; again, this was not the case in 1937. A great deal of slack existed in the productive machinery of the economy. It is impossible for economic relationships to get as far out of balance in the case where there is no acceleration to the higher stages of production (as the process of production " lengthens "), as in the instance where there is significant production of remote, higher-order capital goods. Our conclusion is that the gearing of investment to consumption may have resulted in a rather immediate reaction on the part of investment, but certainly of no great magnitude, at least not of the magnitude necessary to explain 1937–38.

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[1] *Op. cit.*, p. 170.

The Shortage of Investment Outlets

Dr. H. H. Villard alleges that the expansion which started in 1934 came to an end in 1937 with a less than full level of employment " . . . basically because the savings which might go into capital balances that people were willing to provide became larger than the amount which could be invested." [1]

Professor Hansen declares that the main obstacle to full recovery in 1937 was not " . . . inability to obtain capital; it was a failure to develop adequate investment outlets." [2]

Dr. Bratt writes that savings in the recovery period were not promptly utilised for capital construction. This failure to use savings, he continues, has been the most important source of our economic retardation.[3]

Critical comment on this sort of analysis should begin with Howard S. Ellis' remarkably penetrating attack [4] upon the under-investment fears of Hansen, continue with Joseph Schumpeter's enlightening portrayal of the defects in the theory of vanishing investment opportunity [5] and conclude with George Terborgh's summation of the weaknesses of the stagnation thesis.[6] Our abbreviated treatment must mention none but the most pertinent clues relating to the validity of the under-investment argument.

Professor Slichter condemns the vanishing-investment-outlet hypothesis as an explanation of the downturn of 1937 declaring: " Engineering experts are agreed that large new capital needs had accumulated during the great depression and, furthermore, that technological progress had created many investment opportunities which had not been exploited." [7] Another authority who has spoken out against the stagnation thesis is Professor B. M. Anderson, who has said that a permanent change towards a more slowly growing population, and one that contained fewer young children and more older people, would only create for a time a problem of adaptation. A rapidly growing population would want more goods of the same type. " A more slowly growing population," he asserts, " would want better things, qualitative improvements, and a greater variety of things." [8]

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[1] H. H. Villard, *Deficit Spending and the National Income* (New York : Farrar & Rinehart, Inc., 1941), p. 343.

[2] *Op. cit.*, p. 273.

[3] *Op. cit.*, pp. 121–2.

[4] H. S. Ellis, " Monetary Policy and Investment," *Am. Econ. Rev.*, Vol. XXX, Supplement, Part 1 (March 1940), p. 37.

[5] Schumpeter, *op. cit.*, II, pp. 1033–7.

[6] G. W. Terborgh, *The Bogey of Economic Maturity* (Chicago : Machinery and Allied Products Institute, 1945).

[7] *Op. cit.*, p. 102.

[8] B. M. Anderson, " Governmental Economic Planning," *Am. Econ. Rev.*, Vol. XXX, Supplement, part 2 (March 1940), p. 249.

Goods of greater variety and quality would still require large investments of savings. There might be fewer baby carriages, but more wheel chairs—fewer rattles, but more radios. The possibilities one can imagine as to improvements in the quality of housing, transportation, medical facilities and recreational projects, to name but a few, are staggering. The satisfying of the material needs of our under-privileged, without regard for the possible and probable additional wants of our more fortunate, would insure our productive machinery operating at capacity for generations.

Professor Schumpeter argues that there were so many investment opportunities in the thirties that

> " . . . we have established the right to speak of a Juglar prosperity and to infer from experience that it would have asserted itself without any external impulse being imparted to the system by government expenditure or any other factor. In particular, there is nothing to indicate that objective opportunities were smaller or capitalistic motivation weaker than they had been, say, in 1925." [1]

The specific outlets enumerated by Dr. Schumpeter were afforded by innovations in : electrical power, automobiles, diesel trains, refrigeration, air-conditioning, aviation, tractor tires, lighter steel products, continuous steel-rolling mills, prefabricated housing, synthetic organics, protective coatings and plastics. Moreover, many new details in housing such as refrigeration, air-conditioning and double baths were offered in the thirties. Decentralisation to suburban and rural areas was an added factor which should have increased demand for durable consumers' goods. We cannot accurately state that the country was so wealthy that a demand for tangible wealth no longer existed. Unforeseen circumstances are not the only sources of demand which provide investment outlets—we need no innovations to stimulate activity.

Let us also examine the savings side of the savings–investment process, inasmuch as Dr. Villard especially emphasises the relativity of these magnitudes. Liquid savings of individuals increased $8 billion from 1934 through 1937, while total income received by individuals aggregated $190·9 billion over the same years. This represents an extremely high consumption function. Corporation savings are not included in these figures, but Mr. Abramovitz has noted that corporations paid dividends in 1937 [2] at the same rate as in 1936 even though their profits had decreased 15%. In his words : " As a result business dissaved one billion dollars and savings from dividends failed to make up for this high rate of business dissaving." [1] We also know that dissaving by business results in a much smaller aggregate of savings out of the same total income. Paul Samuelson's study of the savings–investment problem led him to estimate that a reduction of business savings of $1·00 was likely to cause individuals to increase their savings by about 20 cents.[2]

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[1] *Op. cit.*, II, p. 1026.

[2] Due, in great part, to the penalty provisions of the undistributed-profits tax.

Obviously the government did not save anything, inasmuch as total government receipts for the four-year period, June 1933 to June 1937, totalled $16,326 million, and total expenditures aggregated $30,559 million for the same period. This huge deficit of the government will offset many of the illiquid savings which are not included in our figures for liquid savings because most of the savings not wholly represented there (individual purchases of long-term bonds, insurance company and bank savings, etc.) were absorbed by the government, in return for government obligations, and were spent. Savings in the form of direct capitalisation or other forms of " investment " are not included in our figures, nor is debt reduction, but we do have enough of the savings traced, especially when we consider the huge deficit of government, to suggest that there was no great decrease in the marginal propensity to consume during the period under consideration—at least not until some consumer resistance became apparent in the housing and durable-consumer's-goods markets in 1937. Our conclusion is that savings were not overly great when compared with the volume of available outlets for their investment.

The Rise of Wages and the Narrowing of Profit Margins

Professor R. G. Hawtrey has touched on the theory of rising wage-rates while speaking of the possibility of unemployment being caused by overly-large wage increases. He has written :

> " That this danger [of unemployment] is not imaginary is shown by the American experience of the years 1936–37, when a revival of activity was not only checked but reversed by a general increase of wages in manufacturing industry,

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[1] M. Abramovitz, " Savings and Investment : Profits *vs.* Prosperity ?" *Am. Econ. Rev.*, Vol. XXXII, Supplement, part 2 (June 1942), pp. 65–6.

[2] A. H. Hansen, *Fiscal Policy and Business Cycles* (New York : W. W. Norton & Co., Inc., 1941), pp. 250–60.

> which in nine months raised the average hourly wage in the twenty-five principal industries from 62 cents to 71." [1]

Towards the end of 1937, President Roosevelt sent a special housing message to Congress in which he said that housing construction had fallen short of 1937 goals because ". . . the rise in hourly wage rates and material prices was too great and too rapid for the consumer to bear. A similar rise in costs likewise checked production and buying in other industries as well." [2]

Mr. Chester C. Davis of the Board of Governors of the Federal Reserve System delivered a speech on November 13, 1937, in which he denied that monetary measures had caused the depression. Rather, he would place the cause as

> ". . . a maladjustment between prices of materials and labor costs, on the one hand, and rents and prices of finished goods on the other; a period of over-exuberance in production and placing of orders and a consequent letdown when it became apparent that our expectations had once more been inflated." [3]

Sumner H. Slichter has contributed two especially significant articles on this topic to the literature.[4] In both he has stressed the role of rising wages and decreasing profits.

Two other authorities deserving mention are Dr. C. O. Hardy [5] and Dr. K. D. Roose; [6] both have emphasised wage fluctuations and diminishing profit margins.

The position of the aforementioned economists and political figures is by no measure dogmatic or indiscreet. They follow many paths, and disregard few if any approaches. Generally speaking, however, they have not marshalled all the evidence now available to support their conclusions. Professor Wesley C. Mitchell, following Lescure, rather fully developed the profit-prospect theory of the business cycle, in which wages constitute the principal cost element acting as an offset to profit. The position of the price level constituted the limiting variable on the demand side in this system.

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[1] R. G. Hawtrey, *Economic Destiny* (New York: Longmans, Green and Co., 1944), p. 253.

[2] *Commercial and Financial Chronicle* (Dec. 4, 1937), p. 3541.

[3] *Ibid.*, Nov. 20, 1937, pp. 3285–6.

[4] S. H. Slichter, *op. cit.*; and "Corporate Price Policies as a Factor in the Recent Business Recession," *Proceedings of the Academy of Political Science* (Jan. 1939).

[5] C. O. Hardy, *op. cit.*

[6] K. D. Roose, "The Recession of 1937–38," *Journ. Pol. Econ.*, Vol. LVI (June 1948). Furthermore, in this valuable contribution, Professor Roose especially analyses the role of inventory accumulations.

Applying this explanatory device to the period of the middle thirties, one notes that in spite of the fact that consumer incomes were substantially outrunning retail prices, consumer resistance to higher prices was in evidence in late 1936. The rise in prices that did occur may be at least partially explained by the federal government's gold and silver policies which assured an abundant supply of money and credit at low rates of interest, by farm and employment subsidies, by the 1936 veterans' bonus as $1,200 million was promptly cashed, by fears of inflation and by fears of labor trouble and higher wages. In addition, there was a world-wide accumulation of raw materials induced by the Spanish Civil War and the general European rearmament, which in 1936 was progressing at an annual rate of approximately $11 billion.[1]

Nonetheless, price rises were resisted in many quarters by such barriers to capital formation as higher taxes in the upper brackets, the undistributed-profits tax and new and extremely rigid security market regulations relating to "pyramiding," margin trading, sales by "insiders" and registration statements and prospecti. Also, many of the workers whose incomes were increasing had debts to pay. Others were uncertain as to how long their jobs might last, and hence revealed an increasing marginal propensity to save.

From the cost side, retailers were paying steadily rising prices as indicated by the prices of finished products, which increased until October 1937. Higher labor and raw-material costs had been incurred by producers, and the higher prices of finished products represented the passing-on of these increased costs.

In passing, and before examining the wage problems, notice should be taken of another important cost factor—raw materials. Raw material prices rose more rapidly up to April 1937 than did the prices of finished industrial goods, and thereby contributed to the narrowing of profit margins. Costs of such materials rose from an index of 75·8 (1926 = 100) in May 1936 to 90·1 in March 1937, a gain of 18·9%, while the prices of finished industrial commodities moved upward over the same period from 78·8 to 85·5, a gain of only 8·5%. This, too, represents an encroachment upon profits up to April 1937, and, moreover, the encroachment did not completely disappear during the following five months, inasmuch as raw material prices fell only 5·88% from March through August of 1937.

As for rising wage-rates, labor cost per dollar value of output is one of the most significant indices available, because it combines the interrelationships of the physical output of workers, the money payment laborers receive for the given physical output and the price received by the entrepreneur for the finished physical output. Our indices reveal that labor cost per dollar value of output rose from an index of 93·5 in July 1936 to 101·9 in February 1937—a rise of 9·0%. This percentage rise had increased to 14·6% by April, 19·4% by June and 31·8% by November 1937. Now if labor cost in manufacturing industry were 100% of total cost, we could say that from July 1936 to February 1937, a profit margin of 9·0% per dollar value of gross sales would have been completely obliterated. By the time November 1937 had been reached, a profit margin of 31·8% on gross sales would have disappeared. Actually, labor cost was approximately 16·5% of total cost in manufacturing industry in 1935, according to the *Census of Manufactures.*[1]

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[1] *New York Times* (Feb. 15, 1937), p. 10.

Revising our figures to correct for this fact that labor cost was approximately one-sixth of total cost, we discover that increased labor costs reduced the profit margin per dollar value of gross sales 1·48% from July 1936 to February 1937, 2·40% from July 1936 to April 1937, 3·20% from July 1936 to June 1937 and 5·25% from July 1936 to November 1937.

Certainly this apparent encroachment of wages upon profit margins adds weight to the theories of Hawtrey, Hardy and the others. The typical manufacturing establishment operates on approximately a 6·00–7·00% margin. One would expect a sharp reduction in profit rates during 1937, and this is precisely what did occur. The quarterly index of Industrial Corporation Profits [2] (1926 = 100) reveals an index of 75 in the first quarter of 1936, 98 in the fourth quarter of 1936, 104 in the first quarter of 1937, 101 in the second quarter of 1937, 106 in the third and a collapse to 59 in the fourth quarter of 1937. The index continued downward, and reached a low of 23 in the second quarter of 1938.

The difficulty in using such figures, of course, is that profits fall when industrial production decreases significantly, and the decrease in manufacturing volume from the August 1937 index of 118 to the December 1937 index of 79 is in this particular instance of primary importance. The analysis encounters the problem of separating out the amount of industrial production curtailed because of shrinking profits, from the amount of profits lost because of declining industrial production. The semantic arguments of causation and causality versus coexistence at once arise.

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[1] If one breaks down costs as income to factors of production, labor receives as high as 80% or more, since labor is counted many times in cost without being specifically named. Labor is involved in making the raw materials, the machinery and the plant facilities—hence labor cost tends to add up to over three-quarters of total cost. However, to our manufacturer, the 16·5% "in-the-shop-and-on-the-payroll" labor cost is the important one, since any other labor costs are already included in cost of raw material, semi-finished goods and all other cost items which his suppliers quote to him in the form of a specific price.

[2] *Economic Conditions, Governmental Finance, United States Securities,* The National City Bank of New York (May 1941), p. 56.

Moreover, the factors which precluded an increase in demand proportionate to the increase in the cost or supply side of the 1937 market are nowhere satisfactorily delineated. We have provided a starting point by demonstrating the existence of barriers to capital formation and pointing out that workers of the period revealed a decreasing marginal propensity to consume by paying down debts, increasing liquid savings and attempting to offset the future uncertainty of their calling by not spending so large a portion of their current income. Yet the arguments are not complete or entirely satisfactory. More must be done.

The conclusion is that a *rapprochement* of the wage and profit theories of the 1937–38 crisis and depression will have to integrate the facts of decreasing industrial production, stabilising prices and narrowing profit margins into a more precise theory of causation or coexistence. The intricate puzzle of separating cost and demand factors and then assigning magnitudes and weights is still unsolved.

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THE IRON AND STEEL ACT, 1949

THE Iron and Steel Act marks both the culmination of, and a major change in, the nationalisation policy of the Labour Government. It completes the list of basic industries to be brought under public control, and at the same time introduces collective ownership into a manufacturing industry. With a single enactment one process of economic development is brought to an end and another is begun. This change in policy is clearly reflected in the Act, where a break with the earlier forms of nationalisation measure can be seen.

The central authority to be set up will not take over the administration of the separate units of the industry as in previous measures, but will buy out the shareholders. Initially, at least, there will be no change in the day-to-day running of the steel firms. The authority to be established—The Iron and Steel Corporation of Great Britain—will merely replace the previous individual shareholders, and the management of the industry will remain in the hands of as many of its present directors and executives as elect to remain after the vesting-date. It will be subject to the policy control of a " non-functional " [1] corporation. In effect, the Act will bring about a financial reorganisation and create a holding-company answerable through the Minister of Supply to Parliament. By thus avoiding a tight and unified monopoly it should be possible to avoid many of the mistakes made under other nationalisation measures and retain a high degree of flexibility and decentralised control in a traditionally individualistic industry. In two other respects there are important departures from earlier measures. A certain amount of competition will be permitted, and firms with a small output,[2] or in some other way suitable for exclusion, may operate outside the nationalised industry under the Minister's licence. A second and fundamental departure will make the nationalised industry responsible, not for the supply of a homogeneous commodity, or even a group of commodities, but for the supply of all the products of the steel companies (including their subsidiaries) to be acquired. While the primary purpose of the Act is to bring under public ownership the firms engaged in "the working, getting and smelting of iron ore, the production of steel, and the shaping of steel by rolling"[1] a whole range of end-products, including in some cases consumer goods, will be brought in. When companies to be acquired wish to separate certain processes from their steel-making plant, and operate outside the nationalised industry, permission to "hive-off" may be given by the Minister either before or after the vesting date.

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[1] The Minister admitted during the Committee Stage that a perfectly clear-cut black-and-white distinction between a functional and a non-functional Corporation could not be made. However, he envisaged a corporation composed of " people who are not limited specialists, and, therefore, will not primarily be executive officers, but will discuss and decide general policy." Standing Committee C, December 16, 1948.

[2] Minimum output qualifying for acquisition under the Act; firms engaged in mining ore, 50,000 tons per annum; firms engaged in the further stages of production, 20,000 tons per annum. This provision is similar in principle to that which leaves road-hauliers operating within a radius of 25 miles of their base outside the control of the Road Haulage Executive.

The Act also proposes that a Consumers' Council shall be set up; lays upon the Corporation the duty of ensuring that its combined revenues shall not be less than sufficient to meet its combined outgoings, taking one year with another; fixes the borrowing powers of the Corporation at £350 million; and instructs that redeemable British Iron and Steel Stock shall be issued as compensation to the shareholders of the firms to be taken over.

As it is clear that the Act proposes a major change in the economic organisation of the country, and may well prove to be, either by precedent or by its direct consequences, the most important piece of economic legislation introduced by the present Government, it is pertinent to ask what reasons have been adduced to support the measure's passage through Parliament. The object of this paper is to examine the case for the Iron and Steel Act as it was presented in the Parliamentary debates.

The Government case is based on two groups of arguments; those which are: (*a*) primarily economic and (*b*) primarily political. This dichotomy is not clear-cut, and Government speakers have not made serious efforts to disentangle the political and economic considerations they have put forward. Their failure in this direction may help to account for the fact that the case itself is not internally consistent and that it points to defects in the present organisation of the industry that the Act does not seem designed to overcome.

1. *The Case on Economic Grounds*

(a) *The Efficiency Argument.* The Government does not claim that the formation of the Iron and Steel Corporation of Great

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[1] Preamble to the Act.

Britain will increase efficiency in the immediate future, although the Opposition charge that there is no plan for the Corporation's activities is not entirely just.[1] However, it is not on an improvement in the day-to-day management of the industry that the Government case rests. There are still many unintegrated plants where transport and fuel costs are very high, and there is evidence that due regard is not being paid to locational advantage even for new projects.[2] Present plans are satisfactory, but the difficulties will arise when the first urgent improvements have been carried out and the further stages for the reorganisation of the industry have to be settled and implemented. It will be then that the sectional interests of the multiple owners may stand in the way.[3] Drastic measures may be necessary if the industry is to be properly sited, and if inefficient and unintegrated plants are to be scrapped. Decisions of this kind will have to be made if the industry is to become efficient, and it is difficult to believe that they would be taken by the members of the British Iron and Steel Federation if they were left to their own devices.

There is considerable force in this argument, as the cartel form of organisation of the British Iron and Steel Federation has not brought about a unified monopoly by subduing sectional interests. While it is clear that a considerable improvement in efficiency could be achieved by paying due regard to locational advantage at the expense of existing sites, this could be done only by pursuing a policy of large-scale scrapping. The temptation to retain existing plant at the cost of relatively inexpensive repairs and renewals must always be a strong one. There is evidence [4] that the steel industry has pursued such a policy of patching, and a nationalised Corporation, enjoined to balance its revenue with its outgoings, might well do the same. If the Government means business it must amend the Act and introduce a provision empowering the Corporation to suffer capital losses on a somewhat substantial scale. As it stands the Corporation will be required to issue redeemable Stock for all the assets it takes over and, faced by the necessity of balancing its budget and maintaining its capital, will find itself in the shoes that the steel-makers have uncomfortably worn for two generations.

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[1] See the Minister's opening speech in the Second Reading Debates (*Hansard*, November 15, 1948), where eight tasks for the early part of the Corporation's life are outlined.

[2] In support of this view see " Reports of the Iron and Steel Industry," Brian Tew, ECONOMIC JOURNAL, September 1946.

[3] Viscount Hall, Lords Second Reading Debate, *Hansard*, May 24, 1949.

[4] D. L. Burn, *The Economic History of Steel Making*, p. 470.

The Opposition answers to the inefficiency charge are unsatisfactory. (1) The industry is producing steel in record quantities and is, therefore, efficient. Such a blatant *non sequitur* does not warrant consideration. (2) Efficiency has not been high enough in the past, but the industry has drawn up a large-scale development plan,[1] which has received Government blessing and is now half-way to completion. This is a serious answer, and there seems to be little doubt that the industry's plan has improved the efficiency of the British steel industry and will continue to do so. Nevertheless, at least one observer [2] takes the view that it is a compromise plan which does not go far enough in developing low-cost areas at the expense of high-cost sites, or pay sufficient attention to the problem of unintegrated capacity. The plan itself shows signs of the conflicting interests of the members of the Federation, and certain firms have publically spoken of their dissatisfaction with it.

The inefficiency charge is strong, and its rebuttal is by no means convincing, but there is little evidence that the Government really understands the nature of the problems involved, and it is clear that the Act does not provide the machinery to solve them.

(b) *The Capacity Argument.*

> " It is naturally more advantageous for private owners of the steel industry to have a total productive capacity below potential demand . . . on the other hand it is in the interests of the community and of consumers of steel that productive capacity should be capable of meeting industrial requirements in peace and military requirements in war."

Mr. Strauss continued : " I am far from saying that the steel industry should be extended regardless of economics, to meet the peak demands which the most optimistic can foresee in the next decade or so." [3] The essence of this argument seems to be that there is a gap between the output capacity the industry would itself build and that which is necessary for the welfare of the community.

Unfortunately, the Minister does not go on to say how the optimum capacity can be determined ; he sets an upper limit in general terms, but is careful not to commit himself to figures. Mr. Geoffrey Cooper suggests that we might aim to reach the American *per capita* annual consumption of ·6 tons and expand capacity to 30 million tons ; disposing of the output, if need be, by expanding colonial-development plans.[1] Statements of this kind illustrate both the danger and the difficulty of the Minister's case. The industry will not provide enough capacity if it is left to itself. This may well be true, as the evidence of the inter-war years leaves little doubt that the Federation's investment and price policies have been restrictive in outlook; indeed, the post-war development plan, although it does not offend seriously in this respect, is not expansively conceived. Opposition speakers have not faced the problem by denying that it exists. There does appear to be a conflict of interests on this point, and the important questions to be answered are: (1) does the Iron and Steel Act provide the means of overcoming it? (2) could the problem be solved if the industry were left in private hands?

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[1] Published by H.M. Stationery Office in May 1946. Cmd. 6811.

[2] Brian Tew, *op. cit.*, p. 495.

[3] Second Reading Debate, November 15, 1948.

A profitable discussion of an industry's optimum capacity can take place only in the light of a given price-policy, and on this matter the Act is singularly unhelpful. As it stands the Corporation may charge any price it considers best calculated to satisfy the reasonable demands of the persons who use the products for manufacturing purposes, and to further the public interest in all respects.[2] This, and the instruction to balance books taking one year with another, is the only guide to price policy the Act gives. The complete failure to pay any attention to recent theorising on this matter makes it unlikely that an optimum capacity can be even roughly determined on the basis of economic considerations. In default of any other criterion the Government must lay down its minimum strategic requirements and instruct the industry to build accordingly. If that capacity exceeds the amount that a privately owned industry would build, the Corporation may well find itself in a very similar position to that which the steel manufacturers have been trying to avoid for so long. It would have excess capacity. Under such circumstances the Corporation might pay regard to its obligations to cover its costs and play the (discriminating) monopolist's game. It might, on the other hand, decide " to take one year with another " and reduce prices in the hope of extending sales. Neither course would be likely to increase the general welfare or lead to the optimum distribution of the nation's resources.

A mere change of ownership will not exorcise the problems of the economics of steel-making. If the country needs a larger capacity than a privately owned industry would find profitable, it must pay for it. Clearly the community can, as the U.S.S.R. has done and is still doing, build itself a very large steel industry if it wishes to direct its resources to that purpose, but it cannot avoid taking resources from more profitable uses in the process. Once it is admitted that a large capacity may not be compatible with profitability and that expansion plans might require Government subvention, the way is open to solving the problem by leaving the industry in private hands and granting the same subvention, particularly if this were linked with some form of public control of the Federation's restrictive policies or the restoration of some degree of competition in the industry.

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[1] Second Reading Debate, November 17, 1948.

[2] Iron and Steel Act, Section 3, which also forbids undue preference or unfair discrimination in the supply and price of the Corporation's products.

(c) *The Full-Employment Argument.*

> " This Bill, far reaching and beneficial as its effects will eventually be on the iron and steel industry itself, should not be considered in isolation. It is an integral part of the Government's general strategy for establishing a prosperous national economy. The power over our industrial life which previously resided, with chaotic and disastrous consequences, in the hands of the private owners of the nation's mines, transport and steel, will reside there no longer. However, this power will provide a mighty weapon for maintaining full employment and raising the standard of living of our people."[1]

As the Minister and some other speakers present this argument it has a somewhat naïve look, suggesting that furnaces will be kept in blast and mills rolling, however thin the order books might become, and that the spectacle of a steel plant laying off workers will never disgrace the industry again. If this interpretation misjudges him, and he is thinking along the lines of the Employment Policy White Paper to the effect that the Government and its agencies should plan their expenditure contra-cyclically, there is some substance in it. Large-scale capital replacements by Britain's nationalised industries at times of declining trade activity could have a by no means negligible effect on employment levels. If this is the Minister's case, he is guilty of overstatement; if he means more it would be interesting to know exactly what he has in mind.

(d) *The Financial Argument.* That the industry will require substantial financial assistance if it is to become efficient is a commonplace. Adequate sums will not be available from private sources. The Development Plan, estimated to cost £168 million, will probably cost £250 million because of the rise in prices that has taken place since 1945, and much more will be required in the future. Steel has not been attractive to investors since the twenties, and the industry's inter-war finance had to be assisted by the banks. Indeed, it was the bankers' interest in steel that helped to bring about the concentration and amalgamation schemes of the early thirties. When the Development Plan was drawn up it was felt that "it would appear not improbable that the industry could meet approximately half the cost of the programme out of its own resources" and that, as two-thirds of the additional capital would be required for expenditure in the Development Areas, the industry's claim to what funds were available should be strong.[1] The largest project under the plan, the Margam plant of the Steel Company of Wales, requires no less than £66 million, of which £35 million has been provided by the Government-sponsored Finance Corporation for Industry and 75% of the public issue left in the hands of the underwriters. The Finance Corporation for Industry has also found a further £15 million for other developments under the plan.

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[1] Minister of Supply, Third Reading Debate, *Hansard*, May 9, 1949.

The industry's inter-war difficulties and the necessity of raising £50 million from a Government-inspired institution give force to the Government view that large-scale State assistance will be required if the industry is to re-equip itself and become thoroughly efficient.[2] The proposed borrowing powers of the Corporation suggest that the Government envisages developments in excess of those for which finance could be obtained through the normal channels without State assistance. The argument is to some extent vitiated by the fact that the threat of nationalisation may well have inhibited market reactions since 1945, and makes it impossible to deny the Opposition claim that without this threat sufficient capital could have been found. The evidence on this point is inconclusive.

2. *The Case on Political Grounds*

(a) *The Monopoly-Power Argument.* An immense concentration of political and economic power has grown up, and whether it is used by its private owners for good or ill, it is wrong that it should lie in private hands. If there must be monopoly control of the industry on technical grounds it should be exercised by the community's representatives. The Government does not object to the fact of monopoly, indeed, it proposes to perpetuate the monopoly itself; the efficiency of the industry requires that there shall be a large degree of central control. In the words of the Chancellor of the Exchequer,

> "We have to decide whether such a large measure of industrial control by private interests is consistent with

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[1] *Report of B.I.S.F.*, Cmd. 6811, p. 36.

[2] £350 million.

> present-day democratic government . . . it is not a question as between uncontrolled private enterprise and national ownership, but between the private or public control of a vital industry."[1]

The issue is not, however, simply private control against public control, because the Opposition freely admits the need for Government supervision of the industry in the public interest. The control exercised by the Minister of Supply and the recently defunct Steel Board provides in their view a more satisfactory method of protecting the public interest.[2] This view is firmly rejected by the Minister of Supply. First, it does not enable him to exercise a sufficiently positive influence. The industry can be told what not to do, but on most matters not what it must do. There are good reasons for not separating ownership from control (although the process has been proceeding apace for several decades in the steel industry as elsewhere), but to assert "that it would be madness for a Government determined to build the nation's prosperity on sound economic foundations to perpetuate such a system in a basic industry"[3] suggests little faith in the future of a planned economy of which a large part must be controlled but not owned. Second, under a system of Government control and private ownership the Government remains at the mercy of the men in possession who possess the technical "know-how." Mr. Strauss does not seem to be giving his support to the planning school.

There can be little doubt that the essence of the monopoly argument is political, but it is not necessarily the worse for that.

> "Steel and insurance are the citadels of twentieth century power and no country moving towards a planned economy can afford to concede autonomy to two such giants within its ranks. I do not think it is of any good to deny the political implications of this measure, and for my part I do not deny them—nor indeed conceal them."[4]

A variation of the monopoly argument points to the inevitable growth of combination and amalgamation which has served the nation well and led to improvements in all the major industries.

> "It would be unrealistic to pretend that this development should stop here, and that there is no room for future improvement. The Government, in their realistic outlook, have

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[1] Second Reading Debate, *Hansard*, November 16, 1948.

[2] For a very clear statement of this case see "The Public Supervision of the Iron and Steel Industry," *B.I.S.F. Monthly Statistical Bulletin*, October 1949.

[3] Minister of Supply, Second Reading Debate, *Hansard*, November 15, 1948.

[4] Mr. S. N. Evans, Third Reading Debate, *Hansard*, May 9, 1949.

> taken courage to proceed to what is the next natural stage in this evolutionary process by bringing under public ownership the coal industry, gas and transport industries." [1]

The Opposition answer to the monopoly-power argument is that the British Iron and Steel Federation is merely an organisation designed to provide the advantage of co-ordination and balanced development. At this point an academic observer may be forgiven for bringing to mind Adam Smith's dictum on the meeting together of people of the same trade. However, it is important to bear in mind that the Government case against the industry on grounds of efficiency is based on the existence of sectional interests within the Federation. Surely there is some inconsistency here. If the industry is controlled by a small number of " steel barons " they will not be very powerful if they cannot agree amongst themselves. That the nation's prosperity may suffer as a result of their conflicting interests is beyond doubt, but to admit as much, reduces the force of the monopoly-power argument. The Federation can present a united appearance when orders are plentiful, but it might well suffer, as many cartels have suffered in the past, from the defection of its members in more difficult times. The Federation has not been entirely free from internal dissension.

(b) *The Regard for Social Capital Argument.* The industry has not paid sufficient regard to the effect that its actions have had on the social fabric of the areas in which it operated—or more exactly ceased to operate. Damage to social capital must in future be allowed for in all calculations of profitability. The steel-makers are charged with plunging whole areas into ruin; the partial migration of Scotland's steel industry is cited as a case in point.

Serious as this charge may be, it does not square with the efficiency argument, which points to uneconomic location. The southward movement of Scotland's steel industry has done much to improve the efficiency of British steel-making. The same confusion is evident in Government supporters' criticism of the Jarrow and Ebbw Vale projects. The steel-makers' opposition to the Jarrow scheme may not have been based on considerations of efficiency, but, be that as it may, the North-east Coast was not the best place for a new steel plant. Ebbw Vale may not be a satisfactory site on purely economic grounds, but the most powerful argument employed in the attack on the plan to build the Richard Thomas plant in Lincolnshire was the effect such a migration would have on the already depressed steel areas of South Wales.

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[1] Viscount Hall, Second Reading Debate, *Hansard*, May 24, 1949.

It is clear that there is a conflict between operating efficiency and proper regard for social capital and the maintenance of local levels of employment. As the result of recent technical developments many existing sites are uneconomic. The industry has already begun to desert centres of fuel supplies in favour of areas where raw materials are plentiful, because of improved fuel technology and more efficient processes of extraction from low-grade ores. The extent to which present coastal sites depend on imported ores is also adding unwelcome strain to the balance of payments. A nationalised industry required to make its decisions in the light of the nation's over-all economic situation must pay proper regard to these facts and plan future development at low-cost inland sites. A policy of this kind will be painful both for the contracting areas where employment levels may fall and social capital become redundant, and for the expanding areas where labour will be scarce and social capital inadequate. The consequential demands for social investment are likely to be substantial.

The Corporation may well have to sacrifice profitability if it does not wish to incur heavy, if temporary, social costs. Governments have been prone to pay too much regard to considerations of this kind, and a public Corporation subject to political control is likely to give excessive rather than insufficient attention to non-economic factors. The cure might be as bad, or even worse, than the disease. The Corporation will take over the problem of the conflict between profitability and the preservation of social capital, just as it will take over the problem of determining the industry's optimum capacity. Nationalisation will not in itself solve either issue. The Government case seems to ignore the fact that economic decisions are essentially questions of choice and that changes in economic organisation seldom change the nature of an industry's—or a nation's—basic problems.

(c) *The Mandate Argument.* This measure is a fundamental part of the programme on which the Labour Party won the election in 1945. The pledge given to the nation, and in particular to the steel-workers, whose efforts reflect their faith in the Government's intentions, must be honoured. This is not the place to examine the theory of the mandate and the question of the steel-workers' efforts is one of fact.

Some Opposition speakers brought evidence that certain trade unionists were not anxious to see the measure reach the

Statute Book; while Government speakers pointed to the fact that hundreds of resolutions in favour of the Bill had been passed at steel-workers' trade-union branch meetings. The Opposition evidence was clearly not representative, and if, as the recent P.E.P. report on trade unions suggests, resolutions are on the whole expressions of second-level opinion[1] the Government case is similarly not based on a very firm foundation. The unusually healthy labour relations in the industry have been quoted by the Opposition as an indication that the workers do not want nationalisation, but it is likely that this happy state of affairs is not particularly significant in this connection but is the result of historical factors[2] in no way connected with the issue under discussion.

3. *Conclusion*

Where political and economic considerations are as closely interwoven as they have been during the course of the debates on this measure it is impossible to arrive at a completely objective conclusion. Nevertheless, it should be possible to make some estimate of the strength of the Government's case. When legislators propose to bring about a fundamental change in any part of the organisation of a democratic country they should be required to prove beyond reasonable doubt at least two things: (1) That the situation they propose to change is in fact unsatisfactory and that it is in the public interest that it should be changed. (2) That the measures they propose to take are the best, having regard to all the circumstances, that can be taken to bring about the desired change.

If these criteria be admitted the Government case is unsatisfactory. The nationalisers certainly meet the first requirement on grounds of efficiency, capacity and (possibly) finance. They fail to meet the second in two different ways. First, no solution other than the perpetuation of the present system has been seriously discussed during the debates. For example, the possibility of restoring some degree of competition has not been examined. The technical and political inevitability of at least monopoly control seems to have been accepted by both sides. It is difficult to avoid the conclusion, indeed certain Government speakers admit it, that the Act is doctrinally inspired. It is true that supporting economic considerations have been brought forward with some force, but sometimes they flavour of rationalisation. Second, the Act and the case put forward in support of it in the Parliamentary debates do not form a consistent whole. When the Act is examined in the light of the defects it is designed to overcome, it is somewhat difficult to see how the Iron and Steel Corporation of Great Britain would go about its business. In particular, it is difficult to see how profitability and the maintenance of capital could be reconciled with : (1) a proper regard for efficiency, at least for many years ; (2) an adequate capacity, if this is to be larger than the industry would itself build ; and (3) the maintenance of social capital and local levels of employment. In view of the experience of nationalised coal, transport and civil aviation, however, it would perhaps be unnecessary to release the Corporation from its duty to balance its books—it would not lack precedent for failing to do so.

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[1] *British Trade Unions*, P.E.P., p. 29. Second-level membership is defined as the active branch membership, which varies from 6% to 76%, but is seldom more than 10% or 15% of total membership.

[2] Predominantly, perhaps, the sliding scale, the fact that steel-workers are on the whole well paid and the industry's well-developed conciliation machinery.

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THE UNITED NATIONS' REPORT ON FULL EMPLOYMENT.[1]

WHETHER it proves a basis for immediate action by agencies of international government, an influential tract for the times or simply an essay in applied economic analysis, this report to the Secretary General of the United Nations is an important document; for, in a co-ordinate fashion, it analyses and makes prescription for domestic full employment, short-run stability in foreign trade and long-run equilibrium between the dollar and non-dollar trading areas.

The report was written in seven weeks towards the end of last year in response to a resolution of the Economic and Social Council, adopted on August 11, 1949. The American recession of the first six months of the year, with its sharp consequences for the balance-of-payments position of many countries, brought to the surface a persistent underlying uneasiness concerning the future course of the American economy. At the same time the Soviet Union and its friends on the Economic and Social Council pressed on with a long-standing campaign to call public attention to the instability of capitalist economics in general, and that of the United States, in particular. These real economic and political interests yielded a unanimous request from the Economic and Social Council to the Secretary General to have prepared an expert report on national and international measures conducive to the maintenance of full employment.

The experts chosen (it is regrettable that the Polish economist designated did not participate) took the Economic and Social Council at its word, and produced an explicit and closely related programme for action. The report consists in some one hundred pages of analysis, broad recommendations and specific proposals. In an extension of the United States Supreme Court (and House of Lords) tradition to a new terrain, it concludes with a separate concurring statement by J. M. Clark, with which the other authors express agreement.

The analysis on which the proposals are based contains little that is new, either in respect to its domestic or to its international aspects. It has, however, a number of special virtues. In the first place it was fully agreed by five economists who stem from differing academic traditions and whose several views of the contemporary scene are coloured by an awareness of peculiar national and regional problems. The report thus broadly symbolises the extent to which economists of the non-Communist world have evolved, over recent years, an agreed set of tools and even a common perspective on the great economic issues of the post-war world. In the second place, the analysis brings within a single compass, and forces simultaneous consideration of problems which have tended to be dealt with discretely, by economists as well as by governments. This is, certainly, the report's greatest analytic virtue. Third, the report is clearly written and unambiguous, without gross over-simplification of the strictly economic problems considered. Fourth, both the analysis and the recommendations make clear the gaps in economic thought and policy which need to be filled if the report's large inter-related aims are gradually to be translated into national and international policy.

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[1] *National and International Measures for Full Employment.* Report by a group of experts appointed by the Secretary General of the United Nations. E. Ronald Walker, *Chairman*; J. M. Clark, Nicholas Kaldor, Arthur Smithies and Pierre Uri. (Lake Success, New York, Dec. 1949, 5*s*.)

For purposes of review, it is convenient to consider the proposals somewhat out of the sequence in which they are presented. The authors move over from prescriptions for domestic full employment to the structural problems of international trade and investment; and then they add a scheme for stabilising the level of foreign trade in the short period. In order to isolate certain issues of analysis, the first and third proposals, which have a common theoretical base, are here examined together. The structural proposals are treated separately.

The report takes its start from a now conventional consideration of forces making for fluctuations in income within a given country. Like the examination of the foreign balance which follows, it is, essentially, a short-period analysis. Long-period factors, it is true, briefly appear. There is some discussion of the level of investment, and its limitations as a unique instrument for maintaining steady full employment (para. 73). The authors accept, on a rough empirical foundation, the view that the rate of investment consistent with the secular rate of progress (a concept not explored) is bound to be lower than that necessary for the maintenance of full employment in highly industrialised countries; and that, consequently, in such economies, steady full employment will demand a secular increase in the proportion of the national income devoted to consumers' outlays (paras. 74 and 162). They do not discuss, however, whether this result can be achieved without chronically unbalanced budgets; nor do they consider the possibilities of a secular increase in the propensity to consume. Their view of the long-run pattern of income outlays is, further, not related to the later treatment of long-term international capital flows. The authors' bias towards a concept of secular stagnation is, thus, *ex cathedra*; and, in general, the report's analytic structure reflects the fact that economists have only begun to relate the theory of short-run fluctuations in income to the theory of economic progress.

As compared with other recent simplified analysis of income flow, the report gives considerable emphasis to the inflationary problems of full employment (paras. 84–9, 173–7, and the separate concurring statement of J. M. Clark). It contains, however, no sustained analysis of the role of monopolistic elements in income fluctuations, except in relation to problems of inflation.

Although there is obviously much still to be learned of the practice of full-employment policies, and despite the possibilities of difference in details or in emphasis, the report's discussion of this range of problems, in their short-period aspect, bears the stamp of a mature body of doctrine, well beyond the stage of revolution or even of crusade.

Something of the same may be said of the short-period analysis of international equilibrium (paras. 52–66). This passage reflects the extent to which the classic theory of international trade, in simplified form, has lately been absorbed within the body of income analysis (note especially para. 53). Reference is made to the differing short-period elasticities of supply, as between industrial products on the one hand and primary products on the other. This portion of the text also includes a pointed justification for general and discriminatory deviations from multilateral free trade, as devices of insulation against the full effects of external income fluctuations (paras. 62–6).

The authors have not chosen, however, to deal with income elasticities of demand for various commodity groups, and their consequences for balance of payments of economies of different structure. Nor have they examined short-period distortions which might arise from differing degrees of full employment and inflation, a matter of some practical importance in the world they envisage; for the rapid economic development of under-developed areas accompanied by large international capital movements, which they prescribe, is likely to produce such disproportionate income expansions.

From the analysis, up to this point, flow two sets of recommendations: one designed to maintain steady full employment without inflation within individual countries; the other, to stabilise the availability of foreign exchange, in the face of national lapses from full employment. It would be unfair to characterise these proposals as the generals' prescription for winning the last war, for they are clearly germane; but they obviously owe much to a contemplation of the sort of domestic and international measures which would have avoided the debacle after 1929.

The proposed measures for the maintenance of domestic full employment can be summarised in four groups (paras. 153–64):

> (1) measures to stabilise the level of investment, including encouragement to private investment and direct public enterprise;
>
> (2) measures to stabilise, or secularly to expand, the level of consumers' outlays, including "built-in" stabilisers and a variety of fiscal supports to consumption;
>
> (3) measures to avoid inflation, including a reversal of expansion techniques, if necessary, and institutional arrangements to avoid the monopolistic exploitation by special groups of full-employment conditions;
>
> (4) measures to stabilise employment and income in distinctively export industries, including subsidies to domestic consumption of their products and international price (or direct-income stabilisation) schemes, for primary products.

Here the authors have attempted merely a selective summary of techniques which have already been, at least academically, explored. Especially with respect to the just course between full employment and inflation, however, there are imponderables, which are not evaded in the text and which are, in fact, underlined in the concurring statement of J. M. Clark.

The report states (para. 176): ". . . the situation requires such action by the government, jointly with organized labour and employers' associations, as would ensure that any wage increases that may be granted will not result in a general price inflation." This is, evidently, no antiseptic device of fiscal policy, but a searching political query. The authors, properly, propose no neat formulæ. They have simply underlined a political condition for the successful pursuit of sustained full employment; namely, the acceptance of a common responsibility for the general price level by some groups who have normally pursued their objectives on the assumption that the general economic environment may be taken as given.

The most distinctive suggestion of this portion of the report is that the Full Employment Pledge of the United Nations

Charter be formalised through the adoption and announcement by each country of a full-employment target appropriate to its structure. For industrialised countries, the target would consist of the maximum level of unemployment permitted, without explicit government responsibility for undertaking counter-measures. The concept is extended, as well, to less-developed countries, where the target would consist in the level of industrial employment appropriate to its current manufacturing capacity, the national targets thus moving with the stages of development plans.

The symmetry here is a bit forced; for the strictly domestic measures available to an under-developed country to maintain its rate of industrial employment and industrialisation in the face of a general depression are likely to be extremely limited. And many such areas must depend mainly on the efficacy of international measures to sustain the level of income, and thus the level and character of employment. It is, nevertheless, wholesome that the authors have emphasised the existence on a large scale of this type of concealed unemployment.

The report suggests, further, that governments should formulate and make known, in full and in advance, the kinds of measures envisaged to deal with levels of unemployment higher than the target figure, as well as with inflationary situations; and that adequate powers, for prompt action, should be lodged with the executive branches of the several governments.

The suggested mode of operation of this programme is the following:

> (1) That in addition to the full-employment target (which might be defined as a range) a "signal" level of unemployment be defined, possibly in terms of unemployment in cyclically sensitive industries.
>
> (2) Upon the appearance of "signal" unemployment for three successive months the government would be obligated to bring into play counter-measures consisting essentially in tax reductions, designed to reduce average unemployment to the mean of the target range.
>
> (3) These automatic counter-measures are regarded as simply a part of the whole machinery of full-employment policy, which each country would develop in terms of its own peculiar problems and institutions. The application of the automatic counter-measures would symbolise that the programme as a whole had failed to meet its full objective, and that further measures, quite possibly beyond the automatic measures, were required.

It is easy to dismiss these suggestions as an academic dramatisation of the argument, ill-suited to the empirical rough and tumble of politics, and difficult to reconcile with the Constitution of the United States, a country to which the proposals are notably addressed. Politicians are likely to recognise the power of a proposal that would heighten the public awareness of the implications of a full-employment policy, and they may well fear the transfer of broad and flexible commitments into the realm of automatic executive action. Certainly, should they accept the principle of the authors' proposal, they will fall short of the rather high standard of explicitness set for enunciating specific measures in advance; and, in the United States, the range for independent executive action will have to be carefully adjusted to jealously guarded Congressional powers with respect to the raising of revenue and the drawing of funds from the Treasury (Article I, sections 7 and 9 of the Constitution).[1]

Reservations of this sort may be joined to doubts concerning the ability of relatively free societies both to enjoy full employment and to avoid inflation. Here, it should be noted, that, although there is a considerable distance to go, employers and trades unions, in both Europe and the United States, have exhibited a greater willingness to take account of the effect of their actions on the level of employment and the general price level than is often realised. In principle, there is no reason to believe that a further recognition of this relationship need necessarily result in an end to collective bargaining as we now know it; although its character would certainly alter at periods close to the inflationary margin.

Only the rough test of experience will be able to tell us whether, in fact, people will prefer relatively steady full employment, at the cost of greater discipline with respect to wages and prices, to greater freedom of action with larger fluctuations in employment and profits. The risks of experiment, however, are less than they might appear, given the proven powers of government to impart deflationary impulses to the economy. The possibility of a weak government neither, on the one hand, imposing (*e.g.*, through compulsory arbitration) or negotiating adequate discipline, nor, on the other hand, instituting deflation cannot, of course, be ruled out, especially in the short period. But steady inflation will enforce its own political as well as economic remedies.

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[1] These provisions might be respected by having the annual tax schedules set by the Congress at two levels: one for periods at or below the "signal" level of unemployment; the other for operation should the "signal" level be exceeded. This rigid arrangement would limit executive action to simply taking cognisance of arrival at the "signal" level. In the United States measures to deal with unemployment beyond such pre-defined automatic measures would still require Congressional action, to the extent that they involved new outlays or altered taxation.

In general, this is a problem, like many others faced by political democracies in recent times, where it is easy to demonstrate logically that the acceptance of government responsibility will certainly strain and might threaten the fabric of fundamental liberties. The outcome is liable to depend, however, not so much on the nature of the problem as on the degree of understanding and sense of civic responsibility exhibited by the relevant groups among the people, and on the leadership furnished from the side of government. The resourcefulness of political democracy appears potentially great enough to sustain a high level of employment without either protracted inflation or corruption of the bases of democratic society. The democratic process has proved compatible in some societies with the exercise of wide governmental powers and controls; and it is feeble in many regions where there is almost unlimited scope for individual action in the economy. The strength of the democratic process is a complex phenomenon and not correlated in any simple way with the degree and kind of economic issue settled by communal action as opposed to the interplay of individual actions. Each country will, in fact, have to find its own answer and to strike its own balance between liberty and order in this field; and these balances are likely to differ from country to country, as indeed they differ at the present time.

Taken all together, the suggested steps forward, with respect to domestic full employment, in directions familiar but untried, will be, for governments, like most important decisions of policy, an exercise in balancing hopes against fears; and there is every reason to wish that they adopt, each in the context of its own society, the line of sober courage admirably formulated by J. M. Clark in his concurring statement.

There is a similar dramatic quality in the report's scheme for stabilising the supply of foreign exchange in the short-period. And, in the first instance, it is probably to be understood as a means of making explicit the international responsibility borne by each country for its national level of income and employment, and thus its level of demand for the exports of other countries.

The scheme (designed to supplement domestic full-employment measures, and any stock-piling and other programmes which would help stabilise the level of imports) is, briefly, as follows :

(1) A Reference Year would be established for each country, being the most recent year in which the full-employ-

future limitation on their ability to build-up reserves, caused by the exercise of counter-drawing rights by former depositor countries; or they might reduce imports currently rather than await the doubtful outcome of the annual Fund negotiation.

No one, however, who has observed the various post-war negotiations leading to the allocation of resources and funds, on the basis of complex objective criteria, is likely to hold that the scheme is technically inoperable. No international body has yet failed successfully to divide up someone else's resources, once they have been made available. Staff work of a new kind would be required and the evolution of a common law experience; but clearly a scheme of this type could work.

The acceptance of the scheme hinges on two other factors. First, governments and peoples must be prepared to acknowledge, in the most concrete of possible ways, an international responsibility for the stability of their domestic economic arrangements. And they must be prepared to place flexibly in the hands of the executive branches of their governments adequate funds and the discretion to negotiate concerning them with the International Fund. In the United States such discretion has hitherto been given, with respect to foreign disbursements, only at times of national emergency. Second, there is the question of whether the scheme is needed. It is frankly designed to supplement chronically low foreign-exchange reserves. Their present level now results mainly from structural difficulties in world trade. The scheme is not designed to remedy these structural difficulties, and could not be properly applied, in any case, until the structural difficulties had been solved, or were clearly on the way to solution, by other means. One might ask whether it would not be wiser to concentrate on measures for domestic full employment and on solution to the structural problems of trade, and count on such a world economic system to yield foreign-exchange reserves capable of dealing with the international consequences of lapses from full employment. Some may hold that, if we are patient, and act elsewhere to create a rational economic environment, the Fund, perhaps with somewhat larger resources, might work.

On formal grounds, however, the authors' position is well based. They can establish a clear gap in the structure of international agencies, as presently organised (paras. 120–1). They can point to the reality of each country's responsibility for either initiating or communicating an international impulse to deflation (para. 119). They can emphasise that the call on depositing countries would come at a time of unemployment when, in any case, deficit financing is likely to be in operation, and the real cost of its deposit would be low or even negative (para. 137). To these considerations might be added the likelihood that the course of the solution to the structural trade problem is likely to be slower and more precarious than we may hope; and that the building of adequate foreign-exchange reserves is likely to be a long, slow process. A cushioning flow of foreign exchange would probably be useful. Further, the existence of such a scheme, which would make, in a sense, gifts to foreigners alternative to gifts to nationals, would constitute a powerful political incentive to the maintenance of domestic full employment.

There is a final argument for some such scheme which may, in the long run, prove to be its greatest justification. If, as may well be, we must assume that countries will choose different balances of liberty and order with respect to domestic full-employment policy there will be a strong incentive for the more highly disciplined countries to maintain machinery of discrimination and control over foreign trade, and to fear to take the final steps towards free convertibility of currencies, even after some tolerable order has been established in the world trading framework. In the nineteenth century free convertibility hinged not only on adequate reserves and an international short-term as well as long-term capital market, but also on the existence and acceptance of a single business cycle for the whole world trading area. It may be that a scheme of this type could be an important instrument for holding within a single free trading area economies subject to differing degrees of income fluctuation.

On the whole the scheme is to be judged fundamentally valid, if it proves politically negotiable. At the cost of some conceptual refinement, it might well be simplified. But it is not lightly to be set aside; for it is addressed to a real problem, the solution of which may prove a decisive link in the chain of domestic and international economic policies to which most governments are, in principle, committed.

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In the full framework of the report the proposals for short-run stabilisation of foreign trade are designed to operate in an environment where domestic full employment is tolerably well maintained and where solution has been found for the dominating structural distortions of post-war trade. The authors have boldly brought together the problems of sustained full employment and of long-run trade equilibrium between dollar and non-dollar areas.

The formal grounds for introducing this vast theme are three: that full employment will be precarious so long as deficit countries cannot purchase, out of current earnings or manageable borrowings, essential raw materials for industry; that the development plans of many under-developed countries, the fulfilment of which is necessary to reduce the level of concealed unemployment on the land, are now precariously sustained by diminishing currency reserves; and that present disequilibrium prevents the building of adequate foreign-exchange reserves, and leaves the import and employment level of many countries sensitive to even small disturbances in international trade. "Without the restoration of over-all equilibrium in balances of payment, it will be impossible to achieve the kind of stable international framework within which full employment policies can succeed" (para. 102).

The structural distortion in world trade is defined as the inability of Western Europe to finance on current account its imports from the dollar area (only 43% in 1948); a similar but lesser inability currently to finance American imports on the part of many non-European countries (74% in 1948); and an inability of the United States to cover its exports by imports of goods and services (only 62% in 1948).

To correct this insecure structure of trade, now largely dependent on annual Congressional grants and on diminishing foreign-exchange balances, two measures are proposed:

> (1) a world trade-adjustment conference, under the ægis of the Economic and Social Council, in which governments would examine each other's future trade plans and adjust their own plans in the light of what was thus revealed and in the light of . . .
>
> (2) a system of stabilized long-term international capital movements, on the basis of substantial borrowings from governments and lending to governments, for general development purposes, to be operated by a new department of the International Bank for Reconstruction and Development.

Reflecting the undeveloped state of dynamic long-run theory, these suggestions are presented against a relatively thin background of analysis. Moreover, the proposal for enlarged international capital movements is only obliquely related to the problem of maintaining full employment in the lending countries (para. 163); and there is no examination of its possible connection with the rate at which the proportion of consumers' spending, in advanced economies, might have to be increased over time. The relation between the investment proposals and the trade-adjustment conference is explicitly made; but it is made in quite general balance-of-payments terms (para. 111).

The authors had, of course, only seven weeks in which to write their report; and they emphasise strongly the further technical preparation that will be required if consultations and negotiations of the kind envisaged are to succeed (para. 108). It is, nevertheless, proper to examine their proposals in this field with some care, both because of the relation of structural trade and investment problems to the maintenance of full employment and because of the priority such structural problems must, in any case, enjoy over the near future.

There is a significant asymmetry in the manner in which the structural, as opposed to the short-run, proposals are presented. In the case of the latter, the authors indicate, in simplified form at least, the considerations that they believe relevant to the formulation of national policies. Their structural prescriptions are more reticent: they stop short, in effect, with the injunction that whatever is done by governments, internally with respect to their development plans, externally with respect to their trade, their lending or their borrowing, should be consistent with full employment on the one hand and short-run balance-of-payments equilibrium on the other. It is a little as if the full-employment proposals had merely enjoined the governments so to act as to maximise national income without creating inflation.

In short-run terms, an increase in capital exports from the United States, for example, makes more dollars available in the world, eases the general dollar shortage and may help sustain the level of employment and income in the United States. This is the vocabulary in which the matter is now conventionally discussed. In long-run terms other considerations become relevant, among them the character of the investment to which the dollars are applied and the manner in which the American economy adjusts to the receipt of the imports or services in which interest must be repaid if it is to be repaid at all.

The form in which the authors' structural proposals are presented makes it peculiarly important that these long-run issues be squarely met; for their recommendations either imply or would explicitly place great responsibility for the character of investment outlays on national or international public bodies. This can be seen by examining the nature of the criteria on which it is proposed that international lending be conducted and the character of the issues that would have to be faced at the proposed trade-adjustment conference.

In prescriptions for domestic full employment (excepting counter-cyclical government projects) investment is assumed to follow expected opportunities for profit; and acts of investment are assumed to be taken by a very large number of individuals and institutions. The aim of policy is to create the environment which will yield the appropriate volume of investment.

What the authors propose, however, is a large, stable flow of international investment the character of which is to be determined by negotiation between governments and an international public body. The criteria for lending by new department would be changed from those now governing the operations of the International Bank. Instead of entertaining particular projects, the Bank would lend to individual governments. Instead of examining the expected profitability of a project, the Bank would examine the whole national development programme to which it was making contribution, and judge whether it was "well-conceived" (para. 116). In particular, the Bank would establish the effect of loans on

> "national income, taxable capacity, and export capacity. While the effects of a development programme cannot be calculated with precision, the Bank should not, in general, lend unless it is convinced that, in consequence of the loan, the borrowing country's current balance of payments will improve sufficiently to permit interest and amortization to be made" (para. 197*b*).

In the past the profitability of international lending to under-developed countries has largely depended upon the development of exportable surpluses of foodstuffs and raw materials and upon the state of the market for such products, when the process of their development had come to fruition. To the extent that this pattern of specialised exports from under-developed countries continues, the Bank would have to operate with some clear hypothesis concerning the relevant future commodity markets and the likely terms of trade for the borrowing country. To the extent that under-developed countries move towards greater diversity in exports, an even wider range of long-run considerations would have to come into play, in applying the recommended criteria for lending.

Clearly, the proposed new department of the Bank would be forced to develop some concept of the future course and pattern of world economic development and foreign trade; and it would be derelict in its proposed great responsibilities if it did not apply its resources in such a way as to move roughly towards some (changing) long-run optimum balance in the world economy. The present distortion of trade simply reflects, in large part, lack of balance in the character and location of production. It is the character and location of investment, as well as its volume, which are the instruments for structural adjustment.

This unexplored range of problems is also implicit in the definition of data which the countries of the world would exchange at the first meeting of the trade-adjustment conference.

> "Deficit countries should declare the amount by which they intend to raise the proceeds of their exports, or to reduce their disbursements on account of imports. Surplus countries should declare the amount by which they wish to raise their disbursements for imports, the extent to which they contemplate reducing their exports, and the amount of long-term lending which they wish to undertake on a continuing basis.[1] These 'targets' would not be in the nature of binding obligations on the countries concerned, but should provide a quantitative expression of the rate and direction of economic adjustment to be fostered by government policies" (para. 105).

As many Civil Servants throughout Western (and Eastern) Europe are aware, the formulation of such foreign-trade targets or plans involves the making of assumptions about the rate and character of economic development in many areas; probable international flows of private and public capital; the state of future markets for particular commodities; the terms of trade; and a range of other factors beyond the control or even the knowledge of any single government.

It is certainly a consciousness of the difficulties inherent in such national projections, and perhaps a suspicion that they have not, in some cases, even been soberly attempted, which lead the authors to envisage the trade-adjustment conference as a continuing exchange and negotiation designed to supply a rough, interim but common basis for future production and trade plans.

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[1] The authors appear to assume that countries deficit on current account in their balance of payments would not wish to envisage flows of long term capital abroad. This is an unlikely assumption and runs counter to the post-war experience notably of Great Britain and France, both of which have been substantial capital exporters as well as in severe dollar deficit over recent years. It seems quite possible that, over the long-period, its greater import requirements may make Western Europe a larger source of supply for international capital than the United States.

> " In our view, such an analysis would reveal the specific trading relationships in which major adjustments are required. It would also reveal the nature of the adjustments in international trade required to secure financial equilibrium at the level of international investment which lending countries are prepared to provide . . ." (para. 105).

In preparation for such a conference, and in its evolution, governments would have to examine, *inter alia*, the probable (and potential) scale and sources of supply (and their relative productivity) for the major basic foodstuffs and raw materials, in relation to prospective demand. They would have to seek to establish the probable rate at which manufactured exports are likely to come on to world markets (including those of Germany and Japan) and the rates of investment and secular expansion of income in various markets that would absorb them. The under-developed countries would have to consider what rate and pattern of investment and industrialisation would prove compatible with long-run (as well as short-run) stability in their foreign balances, and with the maximum increase in their national incomes. The United States would have to consider to what extent it wished to continue to export on the present scale, how it proposed such exports to be financed and what long-run internal adjustments it would be prepared to make to absorb interest payments and even loan repayments, should the proposed level of capital exports not be securely expanded at a sufficient rate. And the governments, in the end, would have to formulate some common working hypothesis on the future course of relative prices as among industrial products, foodstuffs and raw materials, and even as among certain of the basic particular commodities entering into world trade, on which, in fact, national terms of trade largely depend.

From a consideration of these matters, and the rough picture of the possibilities of the world economy that would emerge, each government might know more clearly the directions in which its domestic economic structure and its foreign trade and credit arrangements should move over the next few years.

Simply to state some of the issues involved is to define an area where knowledge is disorganised, the more familiar prescriptions *ad hoc*, and the difficulties of analysis considerable. On the other hand, it is precisely in this region that a solution to the structural problems of trade must lie. In some considerable part it is because analysis and policy have been directed with reference to short-run concepts and short-run considerations that economic events have not moved more rapidly towards a solution to the distortion in world trading relations. Long-run (that is, investment) decisions have been widely taken in recent years in response to the general deficit balance-of-payments position. In some cases, where they have led to increased production, at high productivity, of non-dollar foodstuffs and raw materials, they are likely to prove sound. In some cases, where they have led (or seemed to lead) to increased self-sufficiency, but at low productivity, they may well prove costly; as in the case of considerable recent investment in steel production. In some cases, investment decisions have been made without a clear conception as to whether they would contribute, or not, to a correction of the trade distortion; as, for example, in the release of considerable portions of the sterling balances and in part of French investment in overseas territories. There also appear to be countries, for example Western Germany and Italy, where it is difficult to believe that the authorities have governed their long-run decisions with any consistent conception of the requirements of structural adjustment. And it is by no means clear that the pattern of investment decisions in under-developed countries is moving towards either continuing balance-of-payments equilibrium or towards the optimum exploitation of national resources. This is a field where, in the long run, most of us are alive; and we bear the consequences of bad or misdirected investment decisions.

It is likely to be agreed that it would be helpful for the countries of the world to confront this range of issues; for there is little cause for complacence in the present state of affairs. And the alternative to dealing with the issues consciously and generally is not a self-operating atomistic world economy, but one in which policies and actions, or failures to act, will, in any case, largely shape the outcome. It is appropriate to ask, however, whether the sort of trade-adjustment conference envisaged could lead to practical results.

The experience of the countries of Western Europe, within O.E.E.C., in the mutual analysis and adjustment of national trade and investment plans would not appear to give grounds for much optimism. Here were a limited group of countries, served by a pool of competent Civil Servants and economists, with a strong political incentive to achieve positive results. Yet, in this branch of their common endeavour, they largely failed. Now it is proposed to bring together all the nations of the world, many served by staff work of limited quality. Could an orderly examination of plans, and agreement of a common trading and capital movements framework result, which might serve as a serious basis for fresh trade negotiations and domestic planning adjustments?

As against this legitimate query it should be noted that a world conference would have two assets not enjoyed in Paris: the United States would be a responsible participant; and many other countries would be present whose production and trade arrangements are directly relevant to the structural trade problem. The solution to Western Europe's position lies only in limited part in production and trade adjustments that can be made within that region. It is more heavily dependent on policies pursued and arrangements made with the United States and the whole non-dollar world. In conception, then, a world trade-adjustment conference would have important advantages.

Whether, technically, such a conference could succeed would depend in part on the care with which preparations were made, and the extent to which the process of examination and negotiation was broken down into orderly stages, each designed to establish, in a preliminary way, the answer to a narrowly defined set of questions. One might, for example, envisage a general conference taking place only after a series of regional conferences and a series of conferences on particular basic commodities had sorted out the main issues and the orders of magnitude involved. Meanwhile the United Nations secretariat (including the specialised agencies) might essay a new type of rough model-making, from the data available on the course of population and working force movements, the balance of present and planned production, productivity trends and the consequences for world trade of alternative rates and patterns of domestic and foreign investment.

The authors' proposals for the new operations of the International Bank exhibit a similar analytic limitation (paras. 193–8). The scheme involves a commitment by lending governments to fix annual targets for long-term international investment over five-year periods. These targets would take into account amortisation and repayment of past debts. Governments would estimate the portion of their lending rate likely to take the form of private investments, and would, it is envisaged, make up the balance by public loans (mainly) to the International Bank, which, in turn, would lend to governments on the general criteria indicated above.

These arrangements are designed to maximise the volume of lending, according to criteria of national as opposed to private interest. They would eliminate fluctuations in the flow of long-term international capital. They would cushion the borrowing and lending countries from some of the political hazards of such operations by vesting responsibility in an international agency. And they would supply a cornerstone above which realistic trade and production targets and plans might be erected over reasonable future time periods.

The authors do not consider the criteria on which governments might set their capital export targets. Leaving aside political motives, there are at least five perspectives in which foreign lending might be judged to the national advantage :

> (1) as a means of sustaining national income without making (or, at least while postponing) structural adjustments in respect to the constitution of domestic production, or the distribution of income flows between investment and consumption;
>
> (2) as a means of developing enlarged or cheapened production of particular commodities;
>
> (3) as a means of developing increased supplies in those areas to which it is expected to be easiest to make payments;
>
> (4) as a means of accelerating the rise of income in foreign areas, in order to increase their ability to absorb imports;
>
> (5) as a means in general, of enjoying the indirect consequences of a world economy in which investment was directed towards the most profitable projects.

It is evident that the scale and type of foreign lending likely to be of interest to potential lending governments will be affected by these, among other considerations.

Nor do the authors consider systematically the manner in which their proposals would eliminate all the conditions which have made it impossible for the Bank thus far to play an important part in post-war reconstruction. The acceptance of their proposal for direct government lending to the Bank would, of course, remove the difficulties raised by the diffidence of Wall Street and the great institutional sources of American capital with respect to foreign operations. The hesitation of some governments to borrow in dollars, and thus to accept commitment for dollar interest charges and repayment, would be solved by a successful resolution of the structural trade problem and the ultimate general currency convertibility envisaged elsewhere in the report. The political limitations on the Bank's operations fall, properly, outside the scope of the report.

There has been, however, another important limitation on the Bank's ability to lend. It has, simply, not been presented with a sufficient number of well-designed, business-like proposals. Its agents present a droll picture, combing the .world for serious projects at a time when many countries are eager for and demonstrably require capital imports, even in dollars.

There is, on broad economic grounds, a good deal to be said against international lending in terms of specific projects; and it is on such grounds that the authors propose lending for general development purposes (para. 113). But the present dilemma of the Bank stems in part from real weaknesses in conception and staff work in under-developed countries. These weaknesses in the organisation of investment are not eliminated by altering the criteria for lending from the well-conceived project to the "well-conceived development programme." Ultimately, domestic economic development must be conceived as a series of particular projects, which in detail as well as in broad pattern, yield a more or less rational and self-sustaining structure. The responsibilities here of the under-developed countries, and of the international authorities which might assist them (as suggested in para. 198) are great. And they require advance, in analysis and policy, into the same area as that required for the formulation and negotiation of a stable framework for world trade.

There is a further technical observation to make on the trade and investment proposals. Some of the language of the report would suggest that what we now face is a kind of once-for-all structural adjustment which would yield either an adequate long-run flow of dollars, or production and trade arrangements within the non-dollar world which would adequately diminish world requirements for dollar exports (*e.g.*, para. 105). This view of the matter is wholly understandable and realistic. But it is quite possibly inappropriate; for something more fundamental than a trade distortion may have occurred in the world economy over the past twenty years.

Historically, adjustments in world trade have gone on steadily in the past, in response to the changing structure and requirements of national economies (including the effects of wars) which, by causing changes in relative prices, presented inducements to develop new resources. These possibilities were exploited by national and international flows of capital, altering irregularly in their direction and character. The processes of development required to maintain a balanced flow of world production (for example, in the American West, or later in Australia, the Argentine and Canada) themselves caused further disequilibria in world price and income-distribution relations, in the course of their operation. The history of world trade over the past century and a half is a story of unceasing structural adjustment, executed largely in response to changing price relations, with lags and distortions sufficient to cause substantial trend movements in the terms of trade for particular countries and in relative income flows to different sectors of the world economy. The motive force in such movements (aside from the consequences of wars) has generally been the rate and character of the structural growth of national economies, including population movements, in relation to existing capacity to produce foodstuffs and raw materials.

The present trade disequilibrium is an acute version of a type of problem which is the substance of much of modern economic history. Its solution should not be envisaged in terms of a once-for-all shift, but in terms of a continuing adjustment of world trade consonant with the altering possibilities and requirements of developing national economies.

What is unique about the present situation is that the adjustment is not now taking place by means of capital flows responding sensitively to the current and expected relative movements of world prices and the scarcities they would reflect. The world price mechanisms and patterns of domestic investment are heavily controlled; and a world capital market no longer exists.

The domestic terms of trade in the United States, between agricultural and other prices, is largely determined by law; and these powerful arrangements colour world price relationships. In the Argentine, domestic investment has been steadily shielded in recent years from the temptations of relatively high world agricultural prices. The investment programmes of the states of Eastern Europe are almost wholly divorced from the considerations which would govern them under the operations of a free world economy; while, in some parts of the world, investment and import programmes are being pursued on the implicit assumption that dwindling hoards of foreign exchange will be somehow replaced by a stable flow.

On the other hand, temporary American aid is being granted to cushion Western Europe against the consequences of these "interferences," and against a possibly lower standard of living that might emerge if aid were not granted and the economy of the United States were to adjust to the consequent volume and price level of exports.

The degree and character of planning throughout the world varies, of course, widely. At the present time, however, the governments of countries with even relatively unplanned economies have one sort of grip or another on the variables which would determine the character and rate of structural adjustment in a free world economy. It may be that a large part of the world will be able, over the years, to re-create an environment where currencies are freely convertible, effective international prices operate, capital flows freely on expectations of private profit, direct import controls have disappeared and structural adjustments can take place outside the consciousness of governments or even of economists. But the central fact about the world trade problem is that, consciously or not, it is being managed; and the political roots underlying some of these techniques of management (*e.g.*, U.S. farm policy and the guided development programmes of under-developed countries) go deep, having grown up quite independently of the post-war dollar shortage. We cannot assume that the elimination of the present disequilibrium in itself will restore a world economy where structural adjustment will proceed automatically; and, in fact, a good deal of contemporary management is a political response to the evils resulting from the irregularity and lags involved in unplanned structural adjustment. We now face the political consequences of having let the farmers and producers of raw materials suffer fully in the past the results for income and income distribution of inelastic short-run supply and demand curves, at a time when structural expansion in their sectors of the economy had gone too far, or when industrial depressions were permitted to proceed unchecked. The dilemma as between "stabilized incomes to primary producers" and flexible structural adjustment is quite as important in its implications for the future as that between full employment and inflation; and so is the dilemma presented by confronting the powerful and understandable desire of under-developed countries to industrialise, with the requirements for balance in world production.

Thus, the proposed trade-adjustment conference would not simply face a once-for-all problem of trade disequilibrium: it would face the more profound fact that longer-run political forces have decreed a considerable measure of control over the mechanisms of trade adjustment. Such control, strengthened by the impact of the dollar problem, has placed a premium on autarkic solutions. The underlying purpose of a trade-adjustment conference would be no less than to establish to what extent and by what means we could move towards a world economy which again placed an appropriate premium on the laws of comparative advantage.

If this view is correct its corollary is that some practical, flexible, minimum instrument for inter-governmental examination and management of the framework of world trade ought to emerge. As noted earlier, the acceptance of government and inter-governmental responsibility for the rate and character of international investment, a fundamental variable in trade adjustment, certainly carries this implication.

More than two decades of reflection on the problem of maintaining domestic full employment by means of conscious national policy has led those concerned to seek to minimise the number and directness of controls necessary to achieve that goal. This is reflected in the report's emphasis on the exploitation of fiscal controls over the size and distribution of income as opposed to direct control of private investment or even counter-cyclical investment by governments. In confronting in their totality the structural problems of trade and international investment it is perhaps inevitable that the report's analysis and prescription should be somewhat vague on exactly what would be centrally planned and directed, or even subject to negotiation, at a trade-adjustment conference. Should the governments choose to move along the recommended paths, it would be an urgent task for economists and administrators to sort the relevant decisions and institutions into a kind of federal hierarchy, in which, within an agreed general framework, covering a minimum number of strategic decisions, a maximum area of responsibility was left to governments, in their normal domestic and bilateral relations, and to existing regional economic groupings and specialised international agencies.

While the report deserves consideration in its own technical and generalised terms, its immediate political meaning and intent is evident. It is, in large part, addressed to the American government and the American people. It urges that the United States convert its somewhat *ad hoc* domestic and foreign economic policies on to a long-term basis; and that this basis should provide for a stable if dynamic, relationship between the dollar and non-dollar worlds, at a high level of economic interchange. Whether rightly or wrongly, how rapidly would the influence of technical reservations about one or another aspect of the authors' schemes (undoubtedly now incorporated in many Civil Service memoranda) be dissipated from most of the world's capitals, should the United States government announce itself prepared to entertain them as a basis for exploratory negotiation !

The non-dollar world, or at least the non-Communist portion of it, is indeed deeply concerned with the potential instability of the American economy. Moreover, many fundamental decisions on trade and investment must be made, and are being made, on one or another assumption about the future availability of dollars, requiring in turn, judgment about both the future course of American policy and the structural evolution of the American economy. And in some cases the ambiguity of the future American position serves as an excuse for not facing fundamental trade and investment issues.

Should the United States not consciously deal with the issues raised in the report, decision on them will, nevertheless, be taken. Decision will assume the form of a series of piecemeal actions which, in fact, will determine the level and the character of America's future economic relations with the non-dollar world: Congressional grants of greater or lesser amount; *ad hoc* loans and such private lending as the United States government can indirectly stimulate; an arrangement over sterling balances; adjustments in farm prices and/or acreages, when farm surpluses get too big; changes in tariffs and in the rules and outlook of customs officials; the net result of the enterprise and persistence of European exporters and the powers of adjustment and resistance of American manufacturers in many domestic markets. Out of these actions, reflecting the interplay within the United States of powerful and conflicting interests, surely, some balance, high, low or medium, will emerge. What the report urges on the United States, essentially for implicit political reasons, is that a set of targets be defined for the future course of American lending, imports and production for export; and that these targets be defined soon, and in full awareness of their relations to one another.

It was noted earlier that the full-employment proposals and the foreign-exchange-stabilisation scheme would confront certain difficulties in American political practice; and there would be similar difficulties with respect to long-term foreign-investment commitments by the government. But the most serious difficulties are likely to arise from the need to gain acceptance for new underlying conceptions, rather than from the existence of constitutional restraints.

Certainly, least difficulty attaches to the full-employment proposals. There is, of course, a considerable distance between the thrashing out by the Congress of an annual budget, even when it takes account, in its balance, of the current and prospective state of the economy, and the prompt bringing into play of significant tax adjustments and counter-cyclical outlays. But the fundamental notions underlying a full-employment policy are now widely grasped; and techniques for minimum necessary delegation of discretionary power to the executive can be envisaged. Although the United States has not yet been put to the test of a severe post-war depression, the recommendations of the report, in their rough substance, do not appear outside the scope of practical American politics.

It is with respect to the recommended external commitments, and especially the proposals for long-term capital export, that the greatest difficulties would arise. In part, this is the fault of economists. There is no accepted body of long-term equilibrium analysis, from which persuasive and coherent popular discussion can arise. Keynes, Beveridge and Robertson debated briefly after the First World War; Colin Clark has added much, but his data are rough, and the variables in his system of thought have not been organised or presented systematically; Harrod, Hicks and others are at work, but they have not yet provided a framework that would order the considerable mass of existing relevant data and guide fresh investigations surely. In the United States there is a considerable accumulation of data, analysis and speculation covering portions of the relevant variables, including the work of Kuznets and others in the orbit of the National Bureau of Economic Research, Douglas, Leontief, Silberling, Moulton, Viner and Hansen. The various departments of the government have contributed much, and could contribute more, in this area of analysis, which, of its nature, must remain close to complex masses of historical and contemporary fact. But at the moment there is no generally accepted concept of long-run dynamic equilibrium and its determinants, and no General Theory which would bring them simultaneously together in an orderly way. The existence of a firm basis in theory is important for the development of policy, especially long-run policy. Many of the most serious present and potential difficulties, as between the United States and Western Europe, arise, for example, from the lack of a clear and agreed conceptual basis for the Marshall Plan, and from the *ad hoc* and often misleading arguments adduced to rally public support.

Acceptance of the report's proposals by the United States would also require a heightened and clarified conception of America's commitments, responsibilities and interests in the world economy. Whether, when and how such an essentially political change might be brought about can not be easily judged from outside the responsible government. On the one hand, those responsible in Washington will feel a strong temptation to wait and see what results emerge from the present range of piecemeal initiatives. On the other hand, they will be aware of their probable inadequacy and of the fact that structural adjustments take time and can easily be instituted too late to avoid unpleasant crises. They will also know that the process of America's revolutionary post-war adjustment to world-wide responsibilities is not complete and that there still appears to be play for imaginative leadership. J. M. Clark's conclusions on the risks of fiscal policy in relation to full employment have an even wider application:

> "We are probably taking some chances if we try to do too much with fiscal policy. But we are also taking chances if we do too little to stabilize income and employment at a high level. In terms of fluctuations, the United States might be inclined to accept a moderate amount of irregularity, and rely on its social security system to provide for the resulting unemployment. But the impact of our fluctuations on other countries will not allow us, as good citizens of an interdependent world, to decide the question in the same terms that might govern us if we were isolated. I recognize that the world situation, analysed in this report, imposes an obligation on countries that rank as industrial leaders, and makes it to their interest to demand a higher performance from themselves than they might be inclined to do on domestic considerations alone. To put it in what may be a more pertinent light, this world situation warns us to take very seriously—more so than we otherwise might—the risks of doing too little, as against the risks of using imperfectly tested fiscal devices.
>
> "In view of the world situation, I am prepared to take considerable risks of the latter sort, and it is in that light that I am signing this report."

Should the United States weigh up systematically its capabilities to export capital over a long period and to absorb imports, it is not unlikely that the resultant predicted level of its foreign balance would emerge as lower than many would hope; and that a larger part of the structural trade and investment adjustment must take place as between Western Europe and other non-dollar areas than is often envisaged. The analogy between the present position of the United States and Great Britain in the nineteenth century is, in many ways, misleading. The strictly economic incentives of the United States to export capital and to absorb imports are demonstrably weaker. This possibility strengthens the case for a conscious inter-governmental examination of the issues at an early date.

The resolution of the Economic and Social Council which evoked this report was unanimous; that is, it was supported by the Soviet Union. On the other hand, no economist from a Communist country participated in its drafting; and this is reflected in the text. The report assumes that the problem of full employment is absorbed, in industrialised Communist countries, in the machinery of total planning; and its prescriptions, in general, are focused on the problems of the partially unplanned economies of the non-Communist world.

Leaving aside the question of domestic full employment, there are, however, no obvious technical reasons which would prevent the participation of fully planned economies in the proposed international schemes. Technically, it is altogether likely that the non-Communist world could be brought into and kept in a tolerable balance of production and trade with sufficiently rational and purposeful programmes of national and international investment. Technically, however, the immediate as well as longer-run problems of adjustment would probably be easier of solution with the active participation of the economies now controlled by Communist governments.

Moreover, planning, on whatever geographical scale it is practiced, tends to be autarkic. It is easier and neater to exclude the existence of the absent members than to try to guess their possible contribution and requirements, even at the cost of lower rates of economic progress. A world trading framework is likely to be more productive than one which encompassed only the non-Communist world.

Whether or not the world as a whole is now prepared to move forward along the suggested lines will depend, of course, on a complex interplay of motives, technical and economic in only small measure. In 1947, in response to Mr. Marshall's initiative, such common action failed of negotiation. The present initiative, generated wholly within the United Nations, addressed to problems longer run in character, and wider in scope, offers to all hands a chance to try again.

In their analysis and especially in their proposals, the authors have held up before the governments a vivid image of what the next stages of action might be in decisive areas of national and international economic policy. On the whole, their proposals appear sound, in the sense that they are addressed to the appropriate issues; and, subject to modification in detail, they appear technically practicable. They would require, however, a vast series of technical and political operations, by individual governments and among governments; and they conceal important, largely unexplored, economic problems. Whether or not the Economic and Social Council chooses to act on them this year, these proposals have entered the public domain, and are likely to stay, and to exert influence on economic thought and policy over a long period. The August 11 resolution of the Economic and Social Council has been handsomely implemented.

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REVIEWS

Foundations of Economic Analysis By PAUL ANTHONY SAMUELSON. (Cambridge, Mass.: Harvard University Press (London: Geoffrey Cumberlege) 1947. Harvard Economic Studies, Volume 80. Pp. xii + 447. $7.50).

THE material presented in this important book is described as having been conceived mainly in 1937; it formed the subject of a prize-winning essay in 1941–42; and it finally emerged from the publishers in 1947. The further delay of over three years before this review appears is partly due to the dilatoriness of the reviewer, though he would plead that his offence is mitigated by the fact that the book is too important to be read carelessly, and too difficult to be read quickly.

An adventure into Professor Samuelson's substantial volume is rather like a visit to the study of an eminent economist; the walls, lined with books, and the floor, covered with papers, give convincing evidence of his erudition, and yet one cannot escape the impression of a certain professorial disorderliness. Professor Samuelson seems to have swept up from the floor a sheaf of papers, including offprints of several published articles and quite a lot of rough notes, and, after putting them in a semblance of order, to have dispatched them straight to the printer. The result altogether lacks that lucidity, that sense of a unifying principle, which one looks for in a work on *Foundations.* The principles are there—indeed it is the main purpose of the book to bring them out—but the general impression is of a series of disconnected examples of the Samuelson genius. The mathematics, which is present in volume sufficient to ensure minimum readership by non-mathematicians, is often obscure; and the obscurity frequently arises, not from the inherent difficulties of the subject, but from the use of a notation which is unexplained, or difficult to remember over several pages of argument, or excessively general. Nor can a Cisatlantic reviewer refrain from carping at what seems to be a particularly American habit—careless proof correction. It is bad enough trying to understand Professor Samuelson's mathematics when it is right; it is heartbreaking when it is wrong.

This is all a great pity; it is very much to be hoped that Professor Samuelson will find time to lay a new, shorter, more lucid *Foundations* before us. But having fully indulged the irritation which even hardy econometricians must feel as they struggle through to the end, it is time to turn to the much more important task of assessing the contribution which this book makes to economic theory.

It is convenient to start at the end. In Chapter XI Professor Samuelson discusses the difference between statics and dynamics, and distinguishes four possible types of economic model. The *static and stationary* type is one which fixes the values of variables "for all time," or which imposes on them a regular periodic motion. A *static and historical* system resembles a penny-in-the-slot weighing machine; the successive readings of its pointer form a more or less irregular time series, but this time series is generated by a series of instantaneous static "decisions," one for each body placed on the weighing platform, and there is no link between the successive weights recorded. A *dynamic and non-historical* model is like a toy train running on a fixed circular track; each time the train is started it will, in principle, act in the same manner, running for the same distance and at the same speeds. We do not know what the train will be doing on Monday week, for the only time which enters into the equations of the system is the time from the arbitrary moment of starting. Finally a *dynamic and historical* system is one whose equations essentially contain the calendar date. Into such a system one feeds, from outside the fence enclosing the variables deemed to be economic, specified impulses whose existence is a matter of history. A simple example is the impulse given by the weather to the supply of crops.

The set of all variables in the universe is presumably dynamic and non-historical. Practically any subset of variables is linked with variables outside itself; and, in particular, the economic system (however one may place the hurdles which surround the economic sheep) is invariably dynamic and historical. But the simplified models, with which we necessarily work, need not reproduce this characteristic. Sometimes we ignore all outside influences, concentrating solely on the interactions of a chosen set of variables starting from given initial conditions. Such a system will normally be dynamic and non-historical, but in some cases the dynamic features will be so heavily damped, and the system will so rapidly approach a stationary condition, that it may be a valid simplification to analyse it from the first as though it were static. Professor Samuelson distinguishes *stochastic* historical and non-historical systems as two further types, but I am not clear that the distinction is needed.

When is a dynamic system in equilibrium? The simple mind (often a reliable guide) can be heard whispering "When it stops." Professor Samuelsòn is anything but simple-minded, and Chapters IX to XI are too disconnected to make his argument quite clear. But he appears to conclude that there is often no way of giving a satisfactory definition to the "moving equilibrium" of a dynamic system, and that the important thing is to investigate the stability of its motion. The stability to be investigated is a function of the length of the period on which we fix our eyes. If we are discussing whether a model of the Trade Cycle will yield a stable and realistic movement of the variables, we leave out of account the minor ripples of much shorter period, and also the gradual changes whose effect is observable only over a much longer period.

This discussion of verbal points, whose essence is, of course, contained in Marshall's *Principles*, Book V, Chapter 5, enables us to state the two main unifying principles of Professor Samuelson's book :

> (i) The solution of a static system (that is to say, the determination of its position of equilibrium) is dependent on the maximisation or minimisation of some magnitude; and the secondary inequalities (which determine what kind of a stationary point one has reached) are often the keys to fruitful economic theorems.
>
> (ii) There exists a two-way correspondence between the stability of dynamic systems and the properties of static systems.

The greater part of the book consists of examples illustrating these principles. The first is not at all new, but Professor Samuelson's dogged and systematic application of it to economic theory yields a rich and varied harvest. The second principle has not (I think) been stated explicitly before—indeed, Samuelson himself fails to state it precisely—but in the simpler cases it certainly seems to be useful. It gives a satisfaction akin to that of Projective Geometry—one gets two theorems for the price of one.

The most interesting application of the second, or Correspondence Principle, is undoubtedly to the Keynesian system. We are interested in the signs of nine rates of change, those of the rate of interest, income and investment with respect to each of the propensity to consume, the marginal efficiency of capital, and the amount of money. Information about these signs is given by embedding the Keynesian model as a special case within a dynamic system. If we fix our attention on a medium period, it might be reasonable to suppose that the relations of marginal efficiency and liquidity preference work themselves out as short-term ripples, and can be treated as instantaneous. The dynamic hypothesis can then be stated as follows : " the rate of change of income is proportional to the difference between intended savings-investment and actual savings-investment " (p. 278). If the dynamic system so defined is stable (*i.e.*, if the variables are to be prevented from running off to infinity), mathematical relations must be satisfied which (together with some " obvious " *a priori* assumptions, *e.g.*, that consumption increases with income) will define four of the nine signs. One more can be defined if we assume the rate of interest to be held so that it has no effect on the consumption and investment functions; and three more if it can be assumed that savings, out of a given income, increase with the interest rate, or at least decrease less than investment. One sign remains essentially ambiguous, the rate of change of investment with an increase of the propensity to consume. The stability conditions also prove that, if the rate of interest is fixed, the marginal propensity to consume plus the marginal propensity to invest must not exceed unity. This has received experimental verification, and might be called Dalton's Law.

But this is not the only dynamic model within which the Keynesian system can be embedded. By working with a simple difference equation, Professor Samuelson reproduces as the normal case the same signs as those given by the preceding model, but shows that there is also a perverse case in which four signs are different, and three more become unknown—and still the dynamic system is stable. This perhaps suggests an essential weakness of the method; unless one can embed one's special case within a completely general dynamic system, and then find the stability conditions of that system, one can only produce partial conclusions.

The first half of the book, which deals with static maxima and minima, falls into three main sections : Chapter IV is concerned with the theory of cost and production of a firm, Chapters V to VII with the theory of consumers' behaviour, and Chapter VIII with Welfare Economics. The theory of cost and production is admirably summed up on p. 88, and this chapter will be useful for reference. The discussion of consumer theory is complex, and seems to me to be of value chiefly for its digressions, each of which would supply enough material for several reviews. I refer, for instance, to the discussion of the demand for money (p. 117), to that of the economic theory of index numbers (p. 146) and to the assertion (p. 195) that the idea of consumers' surplus is superfluous—with which I warmly agree.

Professor Samuelson's discussion of Welfare Economics is valuable, both as a historical survey of the development of the theory and as an attempt to make quite clear the ideas implicit in statements regarding the maximisation of welfare. Starting from arbitrary initial conditions it is possible to derive an optimum of production and exchange, such that we have exhausted the possibility of improvements which benefit every individual. But there are still millions of possibilities of further movement open to us, and we can get no further with the task of maximising welfare without making assumptions regarding inter-personal comparisons of utility. This is not new ground, but it is good to have the problem set out so clearly. I could wish, however, that Professor Samuelson had followed up his hint (p. 253) that an essential difference may be introduced into the optimal conditions when one makes the transition from a static to a dynamic model.

The book is rounded off by two lengthy appendices, one summarising the mathematical theorems relating to maxima and quadratic forms, and the second providing a potted text-book on difference equations. The latter is too difficult to be a useful source of reference to economists.

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Economic Thought and Policy. By D. H. MACGREGOR. (London : Oxford University Press, 1949. Pp. 182. 5*s*.)

THE six chapters which make up this recent addition to the Home University Library are devoted to a subject of great fascination and importance. The relationship between academic discussion and the debates in Hansard furnishes a problem with many curious facets. " We are all your scholars," Pitt is reported to have said to Adam Smith on a famous occasion. No less interesting, doubtless, to a future generation will be the connecting links between Keynes's *General Theory* and a certain White Paper on Unemployment.

Professor Macgregor discourses charmingly and gracefully of certain phases of opinion and economic thought in the last 150 years in a book which probably he alone could have written to-day. It is intended as an added commendation to suggest that it will probably delight in an especial degree those (if indeed any survive) whose roots are embedded in the rich soil of last century. For Professor Macgregor writes with rare wisdom and tolerance, with a knowledge of writers whom the younger generation has forgotten, or never known, or taken on trust, and with the grounded faith of one who is not carried about with every wind of doctrine, realising that much that is new is perhaps not so new after all.

The opening chapter on " Supply and Scarcity " circles round Malthus, who is here represented as having " short-circuited the vast complications of the economic system, and brought it to its final terms." The answer of economic science was represented by the " increasing returns " of organisation. No doubt, as Professor Macgregor observes, discovery, invention and organization are not to be separated. Nevertheless, some may feel that in this discussion the potentialities of organisation may be rated somewhat too highly. " For the future, whenever we redate the Malthusian ratios, we have to rely on the steady influence of something we can always command, the organization of industry." Whether we can always " command " organisation is perhaps not so obvious. Even organisation, the efficient midwife of Increasing Returns, may itself be subject to Diminishing Returns.

In the second chapter Professor Macgregor is concerned with Monopoly, Imperfect Competition and the " Representation of Supply." He usefully reminds us that " we have to allow for what cannot go on diagrams." It is, however, in the third and fourth chapters that Professor Macgregor comes into his own. It is these chapters that make the book, and they should be thrust down the throats of every student as a corrective against current misconceptions regarding what people did in fact think and say during the nineteenth century. The earlier of these central chapters is, in effect, an essay on the history of the phrase *laissez faire*, and its changing meanings, supplemented by a consideration of the question how far the leading economists of the nineteenth century were in fact adherents of *laissez faire*, as that phrase is now vulgarly understood or misunderstood. In view of the subsequent ubiquitousness of the phrase, it is odd to recall that it was allowed to slumber from its first chance use by the Physiocrats until it was dug out by J. S. Mill and launched on its meteoric career. And as illustrating the utter confusion of meaning into which the phrase ultimately fell, nothing could be more illuminating than the somewhat grotesque exclamation of Marshall (with all respect to a great name): " Let the government arouse itself to do that work which is vital, and which none but government can do efficiently. . . . So I cry, *Laissez-faire*; let the State be up and doing." When *laissez faire* becomes a plea for unlimited state activity, we have, indeed, completed the circle. No less interesting is Professor

Macgregor's citation of witnesses to testify against the faith generally and popularly ascribed to them. Adam Smith's position is probably more generally appreciated than most. As is here observed, he never brought together his list of desirable public controls; but, as Professor Macgregor says with much moderation, "any dogma of non-intervention by government has to make heavy weather in *The Wealth of Nations.*" Senior is one of those who are not infrequently regarded as somewhat arid and doctrinaire exponents of *laissez faire.* Yet what he did say was that "the most fatal of all errors would be the general admission that a government has no right to interfere for any purpose except the purpose of affording protection." A perusal of this chapter is designed to leave on the mind of the reader a very salutary doubt as to whether the assumed apostles of *laissez faire* did in fact ever believe in *laissez faire*!

The following chapter on "Effective Demand and Employment" has been written by Professor Macgregor with obvious delight. In it he devotes himself to the wholly congenial task of showing that many of the ideas behind the recent so-called revolution in economic thought have already a long history, and can be found not infrequently in writers who at times are pilloried for the obfuscation in which their intelligence was shrouded. It is odd to find Southey (not a professed economist) writing: "better would it be for the State to build pyramids or towers of Babel, than that those who have hands and are willing to work should hunger for want of employment." Even more interesting, because it comes from an economist more frequently slighted than read, is Say's observation that "no act of saving subtracts in the least from consumption provided the thing saved be reinvested or restored to productive employment. On the contrary it gives rise to a consumption perpetually renovated and recurring." Indeed further back in the writings of Quesnay is a maxim of considerable significance: "Owners of property and those who follow profitable occupations should not make sterile savings which withdraw from circulation and distribution a part of their incomes or profits." One inference from Professor Macgregor's discussion is that we might be well advised to re-read, and with care, the works of Say and Steuart. His general conclusion with regard to the recent "revolution" is that "the system is new, the ideas go far back"; and he wisely remarks that "the modern analysis gains rather than loses authority by recognising, instead of depreciating, the growth of its ideas in the work of earlier writers."

In the remaining chapters Professor Macgregor deals with

"Democratic Socialism" and the "Economic Aspects of War"; but enough has been said to indicate the quality of this unusually stimulating study. It may not always be welcome to the very young, some of whom tend to believe that economic illumination is a matter of the last few years; but it will serve a very useful purpose if it drives us all back to the re-reading (or the first reading) of the works of various writers to whom it is so easy to refer with a vague wave of the hand.

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Karl Marx and the Close of his System. By EUGEN VON BÖHM-BAWERK. *Böhm-Bawerk's Criticism of Marx.* By RUDOLF HILFERDING. *On the correction of Marx's Fundamental Theoretical Construction in the Third Volume of Capital.* By LADISLAUS VON BORTKIEWICZ. Edited by PAUL SWEEZY. (New York: Augustus M. Kelley, 1949. Pp. xxx + 211. $3·50.)

WHAT was all the fuss about? In Volume I of *Capital* Marx set out his theory of *value.* The *value* of, say, a week's output of a commodity is the labour-time expended in making it, including the labour-time expended in the past to make raw materials and capital equipment now used up in the process of production. The net output (total output minus the *value* of raw materials and wear and tear of plant) is divided between wages and surplus—that is, profit interest and rent. The ratio of surplus to wages is the rate of exploitation.

In Volume III of *Capital* Marx gives his theory of prices. The exposition is confused by his habit of using one expression for two meanings—*variable capital* means both the annual wages bill of a concern and the capital locked up, at any moment, in the wages-cost of work in progress. He does distinguish between *constant capital* in the sense of the annual wear and tear of physical capital, and in the sense of the amount of capital represented by equipment and the raw material in work in progress, but he often loses his grip on the distinction. (It is to be observed that the categories, constant and variable capital, cut clean across the categories, fixed and working capital.) These, though tiresome, are minor difficulties, and the essence of his theory of prices is quite simple. Wage rates per man-hour are assumed equal in all industries (Marx deals with the complications when they are not), and, when prices are normal, the rate of profit on capital invested is equal in all industries. Thus the price of a week's output of a commodity is equal to the costs of replacing the raw materials and wear and tear involved in its production, *plus* the week's wages, *plus* profits at the general rate on the capital involved in plant and in work progress.

This is broadly the same as Marshall's theory of long-period normal prices (without the complications of increasing and diminishing returns) or as Sombart puts it " a ' quite ordinary ' theory of cost of production " (quoted, p. 31).

It is obvious that the prices of various commodities and their *values* can be in the same ratio to each other only in a very special case. When prices are proportionate to *values* the net product of equal qualities of labour-time must be sold for equal amounts of money. If wage-rates are everywhere the same, this is compatible with the condition that profits per unit of capital must be uniform only if capital per unit of labour is the same in all industries. (Marx describes the ratio of capital to labour in an industry as the " organic composition " of its capital, but, owing to the double meanings referred to above it is hard work to make sense of his definition of organic composition.)

Why then does Marx state (in Volume I) that normally prices equal values ? From the modern point of view, the best line of defence is to argue that in Volume I he is assuming, just for convenience, that all industries are alike. Relative prices of commodities, after all, are of little interest in " macro-dynamic " analysis, and it is quite legitimate to use a " model " in which the ratio of capital to labour is uniform, for the purpose of disentangling the large questions with which Marx was concerned—movements in the total supplies of capital and labour, the development of productivity in the economy as a whole, and the distribution of the product of industry between labour and capital.

Mr. Sweezy hints that this is how he would like us to take it (p. xxiii). But it was not the way Marx looked at the matter. For him *value* and prices were important, and were connected with each other in a fundamental way. He did not think of exchange-value as a relationship between commodities which has no significance when the total of output is considered, but as a quality inherent in each of them—a quality analogous to weight or colour.

> " Let us take two commodities, *e.g.*, corn and iron. The proportions in which they are exchangeable, whatever these proportions may be, can always be represented by an equation . . . *e.g.*, 1 quarter corn = x cwts iron. What does

> this equation tell us? It tells us that in two different things—in 1 quarter of corn and x cwts of iron, there exists in equal quantities something common to both. . . . This common "something" cannot be either a geometrical, chemical, or any other natural property of commodities . . . . If then we leave out of consideration the use-value of commodities, they have only one common property left, that of being products of labour." (Quoted p. 10.)

This, no doubt, is mere assertion, disguised as argument. But having committed himself to the assertion Marx had to reconcile it with his theory of prices.

The reconciliation (published long after his death in Volume III of *Capital*, but conceived much earlier, p. 155) is purely formalistic and consists in juggling to and fro with averages and totals. Marx's contention is that the quantity of surplus in terms of *value* generated by a unit of labour is the same in each industry, whereas actual profit per unit of labour varies with capital per unit of labour. The *value* generated in each industry is conceived to be pooled and shared out again, through the competitive process, so as to bring this about. Once more pure assertion is masquerading as argument, for we have nothing but Marx's bare word for it that the *value* generated per unit of labour is the same in each industry—all we can know in concrete reality is the actual profit per unit of labour, which admittedly varies from industry to industry.

The real meaning of all this lies on a quite different plane. What Marx was trying to convey was a view of the operation of the capitalist system which, right or wrong, is highly significant; but what he actually wrote, taken literally, is a rigmarole entirely devoid of content.

Böhm-Bawerk seized upon the rigmarole as soon as Volume III was published, and made sport of it. His manner is urbane, his argument elegant, and the essay is still worth reading for its entertainment value. But it is totally superficial. The theory of *value*, in the narrow sense of a theory of relative prices, is not the heart of Marx's system (though both he and Böhm-Bawerk believed that it was), and nothing that is important in it would be lost if *value* were expunged from it altogether. Böhm-Bawerk makes out his case, but nothing follows.

In his counter-attack (first published in 1904), Hilferding argues (in a haze of verbiage that Mr. Sweezy finds more rewarding than non-Marxist readers are likely to do) that the theory of *value* is not intended to deal with relative prices, but with the law of motion of society (p. 147). All the same, he cannot discard any part of Marx's system, and he has to find some sense in which it is also true that *value* governs price. To do so he falls back on the historical argument. Before capitalism developed, each worker owned his own tools and the prices of commodities were proportional to the labour-time required to produce them. *Value* then ruled in the market, and, as capitalism developed, *values* were gradually transformed into prices.

The argument about how prices were determined in the pre-capitalist world is conducted in much the same style as the " bourgeois " economists' argument about how Robinson Crusoe equalised his marginal utilities, and is no more convincing. But even if it were true, it would not serve to rescue Marx from Böhm-Bawerk's attack, for his so-called equation, " 1 quarter of corn = x cwts of iron," was supposed to apply, not in an idyllic past, but in the contemporary capitalist market.

For the rest, though Hilferding scores one or two telling points against Böhm-Bawerk's own theory, he throws no light whatever (indeed he throws darkness) on the meaning of the theory that *value* determines price.

Why is it that Marxists, even to this day, have to carry on all this mystification ? Why could not Marx's system have been freed, by constructive criticism, from irrelevance and contradictions and clearly shown to be the original and penetrating system of analysis that, with all its blemishes, it certainly was ? The reason is, no doubt, that the Labour Theory of Value has long ceased to be a theory and become a creed. Perhaps, from one point of view, the Marxists are right to defend it. Religions which take a firm stand upon dogma have shown, in the course of history, great cohesion and toughness, which reason might have weakened. " The spirit killeth, the letter keepeth alive." But the theological style of argument has a corrupting effect upon the intellect.

The last item in this collection is one of the very rare examples of a constructive criticism on a point in Marx's system. Not being a pious Marxist, Bortkiewicz was able to notice an error in Marx's text, and at the same time he was sufficiently interested and sympathetic to put it right. The point at issue is purely formal and of no importance, but it has the same kind of cross-word-puzzle fascination as the " adding-up problem " in " bourgeois " economics.

As we have seen, Marx in Volume III discarded the assumption that prices are proportional to values, but in calculating the output of industries, in some numerical examples, he carelessly reckons raw materials and wear and tear. (constant capital) at prices corresponding to *values.* Since the raw materials for one lot of industries are the output of another lot, his examples fail to hang together.

Bortkiewicz makes an elaborate job of exposing and correcting Marx's slip. Mr. Sweezy refers approvingly to other contributions which have been made to the problem and looks forward to new work being done upon it (p. xxx). He evidently fails to realise that it is just a toy and that the whole argument is condemned to circularity from birth, because the *values* which have to be "transformed into prices" are arrived at in the first instance by transforming prices into *values.*

Marx conceives of exploitation in terms of the division of working time into the part necessary to produce the subsistence of the workers, and the rest, which produces surplus. This has no meaning as applied to individual industries. Obviously, in a specialised industrial economy, it would take any group of workers more time than there is to produce for themselves the goods which they consume. The division must be conceived as applying to the output of the economy as a whole. We must take the sum of all profits received, find its ratio to the sum of all wages paid, and divide the total working time in the corresponding proportion. Suppose that, of total net output, 40% goes to wages and 60% to profits, then the *value* of the wages paid for 100 man-hours of work, is 40 man-hours, and the surplus generated by them is 60 man-hours. Now, each group of workers is conceived to generate surplus at this rate, irrespective of the actual share of profits in the industry concerned. In an industry with more than average capital per unit of labour, where the ratio of profit to wages is, say, 70 to 30, the surplus per 100 man-hours being reckoned as only 60, the extra 10 man-hours' worth of profits actually received is attributed to the fact that the price of the commodity produced "exceeds its *value.*" But this *value* is purely notional, and corresponds to no actual feature of the industry in question. The *values* of commodities are imputed by crediting each group of workers with the average rate of exploitation of labour as a whole, and the "transformation of values into prices" consists of breaking the average up again into the separate items from which it was derived. It is possible to make a logical slip (as Marx in fact did) in either half of the process, but if the imputation and the transformation are both done according to the rules, the answer is bound to come out right.

The above type of methodological criticism appears to a Marxist to be tiresome and beside the point, because the whole rigmarole has a symbolic meaning for him. *Value* precedes price, because the fact of exploitation lies behind the phenomena of the market. May be so—but this is not the kind of proposition that can be established by a tautological argument. Why not state the point of substance openly and leave the tautologies to look after themselves?

JOAN ROBINSON

Cambridge.

Conflicting Patterns of Thought. By K. PRIBRAM. (Washington, D.C.: Public Affairs Press, 1949. Pp. 176. $3·25.)

WHAT Dr. Pribram is concerned to examine in this short book is " the logical background of contemporary social philosophies," or what we mean when we say that " other nations think differently." His object is to explain how different patterns of thought, philosophical, political and economic, are determined by " differences in the methods used in forming basic concepts," in particular by differences in defining the relation between the part and the whole, or the individual and the community (see p. V).

Dr. Pribram distinguishes four main patterns of thought in the modern world. First, comes the scholastic or universalist, which was challenged from William of Occam onwards by the individualist or nominalist pattern. (Dr. Pribram traced the long struggle between these two, ending during the eighteenth century in the supremacy of nominalism in North-west Europe, in his outstandingly interesting essay published in 1912—*Die Entstehung der Individualistischen Sozialphilosophie.*) In the nineteenth century these two patterns were joined, and since then have been continually threatened, by two other patterns both German in origin, the " organismic " (or " nationalistic " or " intuitional ") and the " dialectic " (or " Bolshevistic "). This latter pattern is comparatively clear cut, but the " organismic " or " intuitional " is not, at the edges, so easily separable from other patterns. It is pre-eminently the way of thought of German nationalism and of extreme nationalism everywhere. Starting from the concept of the nation as a unit with interests above those of the sum of its individuals members, its ultimate outcome politically and economically is totalitarian planning. Philosophically, it emphasises the *a priori* intuitive powers of the human mind—if the mind belongs to the right race or nation. In the social sciences it insists that " the nominalistic method used by the natural sciences . . . should be contrasted with the method of 'understanding' (Verstehen) available to the sciences of the human mind and of society," which arrive at their laws by "generalizing inner experience" (p. 87).

There is no doubt about the close logical, psychological and historical connections, which on the one hand, nominalism and empiricism in philosophy have with liberalism, democracy and individualism in politics and economics; and which, on the other hand, extreme nationalism and totalitarianism, have with "*a priori*" and "intuitionist" philosophies. There is no doubt, also, about the great interest and importance of tracing out these connections in all their details, and that Dr. Pribram's fourfold classification would be a most suitable starting point which does correspond with four main patterns of thought distinguishable in the modern world.

Dr. Pribram would, however, agree that the concept of a "pattern of thought," and even more a classification of "patterns of thought," unless defined and applied with the utmost delicacy and patience, will be in great danger of smudging and distorting almost as much as it elucidates. Obviously many of the most important and original thinkers and their works would not perfectly fit into any *one* of these four patterns. Moreover, such classifications, unless applied very flexibly, are apt to lead to, or suggest, arguments like the following: (*a*) "liberal capitalism arose in close alliance with philosophical nominalism and empiricism"; *therefore* (*b*) "subsequent criticism of or opposition to liberal capitalism must be inspired by anti-empirical patterns of thought." Dr. Pribram is well aware of these dangers and ambiguities, but in this volume he gives himself almost no chance of avoiding them. In addition to setting out very briefly his fourfold scheme, he covers in 170 odd pages and fifteen chapters: The Role of Reason in Social Organisation (and in Science and Arts); The Definition of Social Responsibility; The Concept of Liberty; Patterns of Economic Planning (and of International Trade); Armed Conflicts; One World or Two; and The Quest for Lasting Peace. The analysis is inevitably spread rather thin. There is much that is stimulating and a certain amount that is merely disconcerting. For example, Dr. Pribram informs his Washington "Leserkreis" that the British Labour Party's "overwhelming victory . . . in the election of 1945 appears to have been due largely to the spread of social philosophies which have originated on German soil" (p. 107).

Dr. Pribram emphasises in his Preface that "almost every Chapter of this treatise could be elaborated into a detailed book."

It is very much to be hoped that Dr. Pribram will himself carry out this elaboration of the profoundly interesting questions he has opened up. Starting from where he left off in his essay of 1912, he might go on to trace his four patterns, and their conflicts and combinations in philosophy, economics and politics, through the nineteenth century and on into the twentieth. But one may perhaps venture to anticipate that when these valuable volumes materialise, further research will have ensured that "From Immanuel Kant to Emmanuel Shinwell" will *not* be among the themes which they unfold.

T. W. HUTCHISON

London School of Economics.

Introduction to the Study of Economics. By HENRY SMITH. (London : Sylvan Press, 1949. Pp. vi + 224. 10*s*. 6*d*.)

THE writing of an introduction to economics for the general reader is a notoriously difficult task, but to combine it with the provision of a background study of the subject for the undergraduate, all within little more than 200 pages, must tax the ingenuity of even the most practised expositor. The first category of readers are probably more interested in the explanation of current events in the interpretation of which economic analysis often offers remarkably few short cuts, while the second category, whatever their immediate interests in the subject may be, must come early to grips with the tools of the trade. The general impression one receives from Mr. Smith's little book is that he manages to combine the two tasks reasonably well, the central difficulty being met to some extent by the relegation of the more elegant tools of indifference-curve analysis to an appendix.

From the logical point of view, Mr. Smith's approach to the subject is exemplary, although this is not to say that such a treatment is always pedagogically satisfactory. After a brief introduction on the development of economic method, our author proceeds to survey the logic of deductive economics, seeking rather to show the student how the economist reasons rather than to provide him with an interpretation of the economic process. Only after this does he turn to the description of the economic system itself. Here the general reader, unless he has some previous acquaintance of inter-relationships between the different sectors of the economy, may find the going a bit difficult; and he may find the transition to a discussion of fluctuations in income, employment and output, unaided by an adequate discussion of income concepts, a trifle abrupt. The following chapter on the theory of competition is succinct and thoroughly readable. Chapter V introduces the reader to the problems of international economics, but it is probably over-ambitious, and the section on international currency problems at the end of it is the merest sketch. The final chapter on economic policy finds space for some useful brevities on economic planning, and is both critical and informative.

There is a feature of this book that deserves particular mention. Having used the orthodox marginal approach as the cornerstone of his logical analysis, Mr. Smith devotes more attention in his exposition to Marx than to any other economist. Now it is clear that Mr. Smith does so with the intention of giving a balanced opinion of the value of Marx's contribution, but he sets about this task in a curious way. Having described the approach of the early classical economists, he gives a brief account of the Marxian "bouleversement," and then quotes with approval the words of Mrs. Robinson that "the orthodox economists have been much preoccupied with elegant elaborations of minor problems." If he is quoting this passage as a criticism of Adam Smith (the only classicist he mentions up to this point), then the quotation is singularly inapt; if he uses it in the sense of Mrs. Robinson, then, quoting out of context, he does not make it clear to the reader to whom he refers. Later in his book at the end of his chapter labelled "The Modern Economic System in Action," he tacks on to a discussion of the trade cycle which supports the "stagnation thesis" a critical appraisal of Marx's theory of exploitation, which, he avers, resembles the conclusions he has previously drawn. This appraisal is cogently argued, if perhaps it is a little difficult for the beginner, but one is given the impression at this stage in the book that Marx was the only expert at trade-cycle diagnostics, and only some sixty pages later does the reader discover that the analysis Mr. Smith has used owes its origin to the "General Theory"!

One might be able to recommend this book without qualification were it not for the fact that the student is given the impression that economists fall into two categories: (*a*) Marx, (*b*) others. Indeed, none of the principal writers who built up the analysis upon which Mr. Smith mainly relies is mentioned by name at all!

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Current Financial Problems and the City of London. (Institute of Bankers.) (London: Europa Publications, 1949. Pp. 219. 15*s.*)

THIS series of lectures delivered at the Institute of Bankers' International Summer School in September 1948, naturally contains some material which is not of particular interest to British economists. Thus the lectures on "The Organisation and Accounting of a British Bank," "The Work of the Trustee Department of a London Bank" and "The Work of the Foreign Branch of a Commercial Bank" are highly specialised. Moreover, those lectures on topics of more general interest vary widely in their appeal. The "Survey of the Financial Institutions of the City of London" is an excellent introduction to the subject, suitable for a first-year student. Whereas Mr. Harrod's "Survey of the Financial Position of Great Britain . . ." and Mr. Crick's lecture on "British Monetary Policy" are much more advanced.

But this book contains several chapters of great value. Mr. Bareau's analysis of international banking organisations is packed with shrewd comments that deserve consideration by a wide public. It is interesting to note that since he gave this lecture the latest report of The International Bank underlines his contention that, if it is to prove successful, international investment must involve the export of men as well as of funds. As usual Mr. King's description of the London Discount Market is first class, and reinforces the hope that he will soon write an authoritative book on this subject to bring his *History of the London Discount Market* up to date.

A number of other chapters whet the appetite. Professor Sayers surely raises a most important point when he describes central bank credit policy as operating largely by "touching the economy at important sensitive spots" (pp. 99–101). But his examples of such sensitive spots are drawn from current practice in the U.S.A. Where are the sensitive spots in the British economy to-day? Can British monetary policy even fulfil the modest role of avoiding the obstruction of fiscal and planning policy while the economy is so rigid?

There are a few minor points open to criticism. The long and interesting bibliography appears to omit F. Lavington *The English Capital Market* and R. D. Richards *The Early History of Banking in England.* Mr. Sachs seems to do less than justice to the investment trust movement (p. 90). It seems unfortunate that, after deploring the high yields that have to be offered on small issues of shares due to their poor marketability, Mr. Cowen should conclude by advising that small investors should avoid such issues (pp. 39–42). For it is possible to agree with him that large financial institutions have a big part to play in the finance of small industrial companies, and yet to hope that some private investors will continue to buy and deal in their shares. For if they do not the market in them will surely become even narrower and less satisfactory than it is at present.

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The Economics of Illusion. A critical analysis of Contemporary Economic Theory and Policy. By L. ALBERT HAHN. Introduction by HENRY HAZLITT. (New York: Squier Publishing Co., 1949. Pp. viii + 273. $4.)

THE "Economics of Illusion" exposed by Professor Albert Hahn, banker, writer and professor are the economic theories based on the observation, that workers, unable to pierce "the money veil" insist on stable nominal wages, but do not resist a reduction of real wages. This "is the chief assumption of Keynes' employment theory." Yet the economics of illusion include all attempts at preventing and curing a crisis—irrespective of its character—mainly by money manipulations: cheap money, devaluation, deficit spending, public works and so on. Professor Hahn's aim is to show that the theory of their chief advocate, Lord Keynes, "is one-sided . . . and does not cover the general cases . . . and to prove that his inflation deflation theory of employment suffers in itself from inherent weakness." He does it by reprinting sixteen articles (two of them translations) and several appendices dealing with Liquidity Preference, the Investment Gap, Oversaving, Wage Rigidity, Public Works, Deficit Spending and a number of kindred subjects. Some of the papers very successfully elucidate difficult problems to a wider public. Others, first published in scientific reviews, show great subtlety and a wide knowledge of practical banking and finance. Professor Hahn's conclusion expressed in a new summing-up chapter is that: "Keynes has not added anything to previous endeavours to explain the riddle of the cycle." Nor has Professor Hahn in this formidable all-round attack. He claims priority rights to Lord Keynes's basic errors. "All that is wrong and exaggerated in Keynes I said much earlier and more clearly."

Professor Hahn recognises that the money illusion is fading, though governments still try and remedy physical shortages by devaluations and appeal to their subjects to invest their savings in depreciating currencies. In the " Anachronism of the Liquidity Preference Concept " Professor Hahn points very clearly to the " paradoxical result " of cheap money policies : " the business cycle will not be more stabilised in the future than it has been in the past in spite of all endeavours. There will be no more deflations from the credit supply side ; however, this advantage will be offset by the stabilisation of interest rates, which has destroyed a potentially strong anti-cyclical measure." Current policies in Belgium, in Italy and Germany do not quite bear out this prophecy.

The years of scarcity have, undoubtedly, pushed physical factors to the forefront. They have shown that it cannot be cured by monetary manipulations, though their impact on distribution—by falsifying the content of contracts—remains very strong. The sucking power of money drawing labour and capital ingredients into the production process and pulling them out as capital goods—has physical limits. A deficit economy can recover its balance only by reducing consumption or increasing production, or by a combination of both ; money can help to make goods, but is not a substitute for them.

Keynes assumed a society composed of employers and of workers, the latter blinded by the money illusion. It was inadequate as an interpretation of the causes of the 1931 crisis. For that crisis was not the normal down-swing in the trade cycle caused by insufficient investment, not even the result of secular structural changes. It was a compound crisis, in which the forces released by war destruction, war finance, territorial partitions and reunions, shifts in international debts, immigration restrictions, agricultural gluts and others commingled. Structural changes which normally would have been spread over a quarter of a century were compressed into a few years. From this " multiple upheaval and readjustment crisis," no " General Theory of Employment " could be deduced, for what is singular cannot explain the universal, not even other singular but different phenomena. Professor Hahn calls Keynes's theory " monist and unrealistic " ; over-simplified might be better. But Keynes did not over-simplify matters because he did not see them. The doctrine that unemployment could not be fought by cuts in money wages was built on a very solid fact : the attitude of British Labour. Keynes's standpoint may have been opportunist, it was not unrealistic. He forged his doctrinal weapons in order to solve, not an abstract theorem but practical problems. When they varied, he changed his weapons as his last essay showed. The validity of a doctrine was proven by its applicability.

Professor Hahn is rightly concerned over the rigidity of Keynesianism in the hands of his pupils. They see in it the master key which opens all doors. They have not yet found out, that these doors just now, have no locks, but are kept shut by heavy bolts or are even boarded up. Were Keynes confronted with present-day problems, he would tackle them with his old intrepid intellectual integrity. He might rewrite the General Theory of Employment and acknowledge his earlier errors, without contesting anybody's priority rights in them.

M. J. BONN

London.

Hundert Jahre Oesterreichischer Wirtschaftsentwicklung. 1848–1948. Herausgegeben von Professor Hans Mayer, auf Veranlassung der Bundeskammer der Gewerblichen Wirtschaft zum Hundertjährigen Bestande der Kammerorganisation. In Beiträgen von: E. GARHOFER, F. GEISSLER, I. GRAILER, A. GRATZ, O. GRUSS, E. JOHN, R. KAMITZ, P. MÜLLER, W. WEBER, K. H. WERNER, F. WLCEK. (Vienna: Springer, 1949. Pp. xiii + 714. $12·00.)

IN the last hundred years Austria has traversed nearly all political and economic stages through which a European society can pass. Up to 1849–51 she was a multi-national Empire, cut by internal customs barriers, held together by an absolute monarch. After 1851 an attempt was made to centralise her, and the customs lines were abolished. She was the leading member of the Germanic Confederation until 1866, but did not succeed in joining the *Zollverein.* From 1867 to 1918 she was divided into two Sovereign States, united by a treaty renewable every ten years, with joint armies, a common foreign policy and a common customs tariff. After the disintegration of 1918, Austria proper emerged as a small federal democratic republic, the leading member of which, Vienna, was controlled by Socialists. In 1933 this democracy was converted into a vocationally structured "estate" body politic, and five years later turned (1938–45) into a Nazi Province. She is now a reconverted, democratic federal republic, but cut up in four military occupation zones. The problems of the multinational state, the economics of unification, federation, separation and partition can nowhere be studied to greater advantage than in her case. It would be fascinating to analyse her changing structure at the different stages of her development.

The authors of this volume, with the exception of Professor Müller (who writes the Introduction), have not approached their task from a morphological angle. They have divided it according to subjects. The brilliant introduction is followed by a lengthy history of the Chambers of Commerce, justified by the occasion and by the part they have played in Austrian life; for quite a long time they served as constituencies of the Austrian parliament. A chapter on " Currency " provides a mine of information; there are few experiments in currency devaluation and currency stabilisation which have not been tried in Austria. Her " Public Finance " is equally full of suggestions. If deficit financing is really a blessing, Austria, whose budget rarely ever balanced—notwithstanding the ingenuity of her financial experts—would have been a paradise. Her " Domestic Trade Policy," her " Industrial Policy " and her " Transportation Policy " are less interesting to the outsider. But her " Foreign Trade Policy," which alternated between federation and partition and attempted repeatedly, without success it is true, interpenetration with the Zollverein, is well worth studying at the present time. So are " Social Policies." The Old Monarchy was in many ways very advanced in this field. The survival of strong mediæval remnants resulted in a number of vocational organisations, the working of which in the present age of Neo-Mediævalism—not Neo-Mercantilism—deserve this detailed discussion. Later on, the control of federal Vienna by the Socialists led to many bold experiments, especially in housing.

The last chapter deals with " Economic Science " and its influence on " Economic Policies." Here both the Monarchy and the Republic have a most distinguished record : witness the names of Menger, Böhm-Bawerk, Wieser and Schumpeter, to mention the dead only; it is hardly known abroad, that three of them were Ministers of Finance. In few countries only have the Professors been so practical, and the Bureaucrats so scholarly as in Austria. One regrets, that this impressive volume on the growth and the decay of an Empire is written in the style of a learned chronicle, and not of an analytical treatise; but one must recognise that a description and a dissection of the structure of the Austrian body politic at the several stages of integration and disintegration would not have been easy. It would, moreover, be churlish not to thank the *Bundeskammer* for having put at one's disposal such rich, well-organised material. In the past the Austrian Chambers of Commerce have appointed distinguished economists as their secretaries.

Their successors are evidently determined to maintain their close relations with independent scholarship.

M. J. BONN.

London.

Account Settled. By HJALMAR SCHACHT. Translated by EDWARD FITZGERALD. (London. Weidenfeld and Nicolson, 1949. Pp. 327. 15*s.*)

THANKS are due to publisher and translator for producing this excellent and readable English version of Schacht's famous apologia. It is in one way not an important book. We do not find in it anything like a serious or systematic survey of the historic events in Germany in which Schacht played so decisive a part. On purely financial and economic matters the book is almost entirely silent, though there is a perfunctory account of the notorious Mefo bills, for which Schacht claims credit as an instrument, invented by himself, for curing unemployment in the early thirties.

The real interest in the book lies in other fields. It gives vivid pictures of the other leading figures in Germany during the rise and fall of the Nazi Party. These are often highly prejudiced, however; in particular, the chapter on Hitler himself is merely abusive, when it might (one supposes) have been really illuminating. As a piece of special pleading the book is magnificent. Not even the author's vanity can obscure his brilliance. He is prepared to challenge the whole world with his lonely, flashing rapier. No one is spared—not Nazis, German generals, German churchmen or businessmen, not France, America, Russia, not even the German Service of the B.B.C., which, according to Schacht, made life more difficult for him by constantly acclaiming him as an opponent of the Nazi Party. (In fact, the German Service of the B.B.C. rarely did this, but on Schacht's own showing it had every ground for doing so.)

So scintillating a display is not calculated to help the sober seeker after truth. Nevertheless, we do learn from the book a great deal about his own psychology and that of his fellow-countrymen. Schacht was genuinely anti-Nazi, of that there can be no doubt. But not entirely for the right reasons. True, he did genuinely hate the most repulsive features of the regime, particularly its anti-Semitism, and did what he could to protect Jews who fell within his own spheres of influence from its worst excesses. But the reader of his book will find no sign that he opposed Hitler's *war* policy as such. He thought that Hitler behaved far too precipitately, and tried to restrain him, and to induce others in influential positions to do likewise. But the reason for his opposition was, not that a policy of war and conquest was wrong, but that it was being carried out without the necessary preparation, and without adequate economic resources. For instance, he condemns Hitler's decision " to rush the question of Austria's Anschluss to a *premature* solution " (p. 113, my italics); and yet only a few pages later the Anschluss is accepted as " an enormous diplomatic success " for Hitler, and the Western Powers are duly belaboured for having permitted it. This is a neat example of the German desire to have things both ways. Schacht is not opposed to the idea of Germany's becoming " top nation "; indeed, he more than once claims that for the last thousand years Germany has been the centre of world culture and progress. But when Germany tries to translate its top-nationhood into material fact, by aggressive means, *and fails*, then the fault is either Hitler's or the outside world's—but not Germany's.

Particularly revealing are the last two chapters of the book, in which Schacht discusses " The German Problem " and asks for " Re-inspiration." The theme of these pages is the defence of Germany against the charge of " collective guilt " for Hitler's war. With Dr. Schacht (as with millions of his fellow-countrymen) this has become a neurotic obsession, which only a psycho-pathologist could deal with. How can a mere economist or politician tackle it ? Only, I submit, by hammering on at the distinction between " guilt " and " responsibility." That the German people was *responsible* for the war in supporting Hitler and acquiescing in his racial and expansionist policies is a question of historical causation. Whether this " responsibility " involves moral " guilt " or not depends on all sorts of circumstances, and a complete survey of them would certainly bring to light various extenuating circumstances. But the basic issue, from the point of view of the world as a whole, is that of " responsibility." Will the German people now learn that if they once again refuse to take charge of their own political destinies (whether for good reasons or bad) they are liable once again to find themselves the slaves (willing or unwilling) of a Hitler ? They will certainly not be helped towards the realisation of this by Dr. Schacht's somewhat hysterical defence against accusations of collective German war " guilt."

LINDLEY FRASER

London.

The American Economy in Operation. By HORACE TAYLOR and HAROLD BARGER. (New York: Harcourt, Brace and Company, 1949. Pp. xiv + 846. $4·75.)

Foreign Economic Policy for the United States. Edited by SEYMOUR E. HARRIS. (Harvard University Press (London: Geoffrey Cumberlege), 1948. Pp. xiii + 490. 32*s.* 6*d.*)

BOTH of these works exemplify the synthetic method of book production which has become increasingly popular in the United States with the growth of academic specialisation and the difficulty of co-ordinating expert knowledge of sectors of a general field. Thus while the first book is written throughout by Messrs. Taylor and Barger, seventeen of its thirty-two chapters were "originally written" by their colleagues of Columbia College; and the second book is a collection of individual contributions by twenty-four experts linked by short introductory passages written by Professor Harris himself. Both methods of production have their advantages and limitations: *The American Economy* achieves coherence of argument and uniformity of style, at the expense of originality of treatment and sureness of touch in certain chapters; *Foreign Economic Policy for the United States* preserves authority and originality at the expense of an unevenness of treatment and coverage which makes the lot of the reader a rather unhappy one. Some of the short-comings of the latter work, however, must be attributed to the fact, nowhere acknowledged by Professor Harris or his publisher, that the book originated as a series of papers read to a graduate seminar at Harvard University.

The American Economy is the latest of a long series of books and revisions thereof written to meet the needs of the second year of the Columbia College course in Contemporary Civilisation. In accordance with this teaching objective, the emphasis is on political economy rather than economic analysis; the authors are interested throughout in the two general problems of economic stability and the methods of economic control, and introduce economic theory only where the exposition requires it.

The exposition itself begins with a long section on America's natural resources—an old-fashioned approach which, none the less, has much to recommend it, and which should become more popular as employment theory is assimilated into general economics. Subsequent sections deal with national product and national income (an excellently clear treatment by Mr. Barger); the organisation and control of production (including useful chapters on the growth of big business and American public policy on monopolies); conflict and co-operation among economic groups (ranging from labour problems and agricultural policy to consumer co-operation and social security); money and credit (including a pedestrian treatment of central banking along orthodox lines); public finance; and the United States in the world economy. The final section deals with economic planning, full employment and the general issues of freedom *versus* control.

The book undoubtedly fulfils its authors' purpose of providing an elementary account of the workings of the American economy and the problems to which it gives rise; but for that very reason it is unlikely to be of much value to the non-American reader. The description of American institutions is neither compact nor detailed enough to make the book convenient for reference; and the discussion of stability and control problems is vitiated by the authors' obvious determination not to commit themselves on politically significant questions. Throughout, the exposition is tainted by a tendency to " talk down " to the reader.

The papers collected in *Foreign Economic Policy for the United States* are divided into five sections. Part I consists of an introductory discussion of policy issues by the editor—largely a reportorial commentary on the experts' papers—and a rather disingenuous account of American governmental organisation for international economic policy. It is implied on p. 39, for example, that United States policy bears no responsibility for the failure of the London Economic Conference of 1933.

Part II consists of eight studies of individual countries and areas; in general, the individual papers are well done, but one wonders why American economic relations with Europe are represented by one paper on the German economy and two papers, the second rather specialised in scope, on Anglo-American economic relations. This is flattering to the British, but hardly fair to the French. One also wonders why American relations with Canada, a country whose economic policies receive little enough informed criticism from independent sources, should fall to be discussed by a Canadian Civil Servant—the only foreign contributor to this section.

Part III, on international economic co-operation, contains four papers on the obvious subjects—the Fund, the Bank, the Geneva Agreements and the I.T.O. Part IV consists of five papers on the European Recovery Program. Again, the individual contributions are well done (one may mention especially Sidney S. Alexander's contribution on " Europe's Needs and

Prospects," which is a model of clarity in thought and exposition), but the factual content dates them so much that they are interesting chiefly for what one can read in and between the lines about underlying American attitudes on international economic relations. In this respect, the papers by Edward S. Mason and Harry C. Hawkins are of particular interest.

Part V, on problems of international equilibrium, transfers the discussion from the administrative to the theoretical plane. In the first two papers, Professors Hansen and Haberler debate the meaning of "fundamental disequilibrium." Professor Hansen believes in the usefulness of a "cost-structure parity" version of the purchasing-power parity theory of equilibrium exchange rates; he desires to include in the definition of "fundamental disequilibrium" the case of a country undergoing deflationary pressure from the outside world but without a balance-of-payments deficit; but he does not believe that a deficit necessarily proves that a country's exchange rate is out of line, or that depreciation is the right way to cure a structural disequilibrium. Professor Haberler disagrees on all points: he believes that departure from purchasing-power parity is not a cause but merely one symptom of disequilibrium—in what sense a symptom, he does not quite succeed (p. 387) in explaining; he argues with convincing logic that only the emergence of a deficit should be regarded as a sign of the need for a currency depreciation; and he maintains that international demand elasticities are sufficiently great for depreciation to solve balance-of-payments deficits. In this last argument Professor Haberler seems to rely too much on a quotation from Marshall, and to ignore the difficulties of correcting structural maladjustments; incidentally, in his refutation of Professor Hansen's argument (pp. 393–4) he appears to fall into the confusion of assuming an appreciation and arguing as if it were a depreciation.

Professor Samuelson, in a series of comments which do not quite make a coherent paper, broadens the attack on the purchasing-power-parity theory, and demonstrates the consistency of "dollar shortage" with classical theory once capital movements are introduced into the analysis. Dr. Triffin, writing on "Exchange Control and Equilibrium," presents a masterly discussion of the advantages and limitations of exchange control as a mechanism of adjustment. Professor Haberler's second paper, on "Dollar Shortage," succeeds in disproving the existence of dollar shortage in the inter-war period, but is not so successful in verifying the classical "inflation" explanation of the contemporary problem—his definition of "inflation" seems to bring in structural maladjustment through the back door. His paper does have the great merit of isolating the central issue of "dollar shortage"—how great a reduction in its standard of life it is reasonable to expect a country to make—from the technical apparatus in which it is usually embedded. In the final paper Dr. Balogh serves up his usual mixture; some of his arguments for discriminatory restriction of imports from America look rather odd in the light of recent emphasis on attaining a high-level balance between the dollar and non-dollar worlds, but it is a pity that Dr. Balogh's inclinations towards inductive over-generalisation obscure the important points he has to make.

Judged as a work on American foreign economic policy, this book falls far short of the promise of its title; judged as a collection of articles, it has much to recommend it. The last section at least is indispensable reading for international economics theorists. But surely, in the interests of scientific progress, Professor Harris's authors could contribute to a less expensive periodical?

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A Concise Economic History of Britain From the Earliest Times to A.D. 1750. By SIR JOHN CLAPHAM. (Cambridge University Press, 1949. Pp. xviii + 324. 12*s*. 6*d*.)

THE news that Clapham had written a book briefly reviewing British economic history before 1750 naturally aroused great expectations; and the book itself richly fulfils them. Its quality indeed illustrates the dictum of Johannes Haller: *Nur der echte Forscher kann ein rechter Darsteller sein.* But the meaning of that dictum is here amplified, for the period covered lies outside that to which the author's researches were mainly devoted; and the book exhibits the extraordinary range of his knowledge as well as his remarkable powers of exposition.

In the field of economic history there have been, it is true, scholars more profoundly learned than Clapham—Vinogradoff, for example—while Sombart, in his rather unscholarly way, was, I suppose, more *widely* read. But surely no economic historian was ever so *well* read, in the strictest sense of that term, as the author of this little book. A work so concise and so closely packed with information might easily be very dry reading, and inevitably its literary quality is not as that which enobles the works of Professor

Tawney and Mr. and Mrs. Hammond, but certainly the book is very well written. Clapham had an eye for significant and illuminating detail; and the fine discretion with which he has exercised the extremely difficult art of illustrating an historical point by an apt modern analogy is quite wonderful. The treatment is, in general, admirably and refreshingly concrete—perhaps excessively so, for sometimes one feels that Clapham's well-known dislike of " empty economic boxes " has led him to underestimate the value of abstraction and classification as aids to understanding. The description of history as a " seamless garment " is quoted at the beginning of one chapter; and throughout the book the reader will find little or nothing about any succession of " economic systems " such as those of Bucher or Sombart, or about the " ideal types " employed by Max Weber. The importance of the economic factor in history is never over-stressed; but still less is Clapham inclined—as Schmoller and Cunningham were inclined—to exaggerate the influence of political factors and economic policy upon economic conditions. Occasionally one wishes he had allowed himself to express a definite opinion on matters of controversy: for example, it is only from casual references such as that to " the rich—if turbulent—fifteenth century " (p. 170) that one gathers he did not wholly accept Professor Postan's judgment of that century as a period of economic decline. Yet there is no tendency to " hedge " or play for safety. To take two points, Clapham does not hide his opinion that the gilds played a less important part in the economic life of the middle ages than is commonly supposed; and his emphasis upon the rise of the yeomanry in the Tudor age is a definite if tacit criticism of Professor Tawney's concentration of attention upon the " rise of the gentry."

The book is never provocative and always concerned in the main with hard facts; yet it stimulates thought so much that one is tempted to embark upon discussions beyond the measure allowable in a brief review. I will, however, confine my comments to two matters.

First, Clapham's picture of agrarian organisation in the early Saxon period seems unduly " manorial," and it looks as if this was largely because he allowed too little importance to the Scandinavian invasions and so minimises the force which more than any other promoted the " growth of the manor." Though he recognises, with Maitland, that the Danes in a certain sense " freed the districts which they conquered," he ignores the other half of Maitland's celebrated paradox—that " they in the same sense enslaved the rest of England." Perhaps he was also unconsciously influenced by the contrast between the large number of " tons " which have names incorporating the name of an owner or lord, and the comparatively small number of " Charltons " which belonged to lordless churls. He seems to have overlooked the evidence which indicates that many place-names of the former type are of rather late date. Yet he notes that the termination " ton " did " not always mean ' village ' but often just ' enclosure,' ' settlement ' or ' farm,' " and he allows that some of those who gave their name to such places may have been " just freemen," and that many places which did not acquire the " tell-tale name " of Charlton " were also churls' places " (p. 44).

Secondly, in regard to the Revolt of 1381, Clapham repeats the common observation that " like so many social upheavals " it " came when the people were anything but sunk in misery " and observes that " with increasing comfort they felt themselves strong enough to resist uncomfortable novelties " (pp. 120–1). That there is truth in this none will deny. But we should also remember that, in an age of change and improvement, advance is often very irregular : some prosper and others see those who have been their equals win advantages that their fellows have not attained, so that discontent is not only made effective by being " shot with the colours of hope," but is intensified by a sense of unfairness. *La première et principale cause de sédition est l'inégalité.*

Two small slips should be corrected in the future editions which will certainly be called for. " Dredge "—a term usually employed for a mixture of barley and oats—is described as " mixed winter-sown grain " (p. 81). And the Loggan engraving reproduced on the dust-cover which appears to be the picture referred to on p. 217, does not support the statement that the men are shown reaping " with a sickle applied half-way up the straw."

REGINALD LENNARD

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The Mining Guild of New Spain and its Tribunal 1770–1821. By WALTER HOWE. (Harvard University Press (London : Geoffrey Cumberlege), 1949. Pp. 534 + ix. 42*s*.)

IT is pleasant to see that the studies in Spanish history by such American historians as Professors Haring, Hamilton and Dr. Klein are being carried on by a new generation of scholars. Professor Haring originally suggested that the Cuerpo de Minería might be a fruitful field for research, and Mr. Howe has produced a book well worthy of comparison with Professor Haring's own studies of Spanish trade.

This is essentially institutional history, and of its kind it is a very good example. It traces the origin of the Tribunal de Minería in Mexico in 1777, the reorganisation of the Tribunal in 1781, the administrative activities of the Tribunal and its handling of litigation. There are valuable chapters on the Mexican Mining industry before 1770 and on the later history of Mexican mining after the experiment of the Tribunal. There are appendices on such topics as bullion coined in Mexico from 1537 to 1856 and on plans for special technical education for miners. The Bibliography and Index are models of efficiency.

The Tribunal de Minería was set up in an attempt to solve the serious difficulties which were crippling the mining industry in Mexico at the end of the eighteenth century. The miners' representatives presented a convincing argument to show that what was needed was a more adequate supply of capital. The Tribunal was supplied with money from a tax on silver, and was intended to lend capital to help mines whose profitable development might otherwise have been cramped. The setting up of the Tribunal in a surprisingly short time is an interesting example of the practical efficiency of the Spanish Government of the enlightened Charles III, but its failure to assist the development of Mexican mining is an instance of the inefficiency and indeed of the dishonesty of some of the most prominent members of the mining community in Mexico.

Mr. Howe has pieced together the story of the Tribunal de Minería with admirable thoroughness, and presented it with beautiful lucidity. Sometimes the story reads a little like an abstract of an office file, but this often must, in fact, disguise a great deal of patient research to track down missing papers and to sift and discard irrelevant information. When Mr. Howe allows himself to interpret his material, as at the end of the chapter on the financial activities of the Tribunal in the first ten years of its existence, he shows clarity and a grasp of essentials which is masterly. If his book is sometimes rather dry and even at times a little dull this is a weakness of institutional history, and Mr. Howe very wisely does not try to achieve a fictitious interest by philosophising or by using a study of eighteenth-century conditions as a peg to hang political comments on Mexico or Spain. As was to be expected from a book in the Harvard Historical Series the tone of Mr. Howe's book is objective and academic in the best sense. He has made a real contribution to our knowledge of eighteenth-century Spain and Mexico. It is to be hoped that his work on eighteenth-century Peru will not be too long in making its appearance.

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England's Climbing-Boys. A history of the long struggle to abolish child labor in chimney-sweeping. By GEORGE L. PHILLIPS, with a preface by ARTHUR H. COLE. (Harvard University: Graduate School of Business Administration, 1949. Pp. 61.)

THIS story of the climbing boys is the work of an American scholar who has assembled from England and elsewhere all possible documents dealing with the subject. The history ends with an exhaustive bibliography listing books, pamphlets, reports and Parliamentary papers and covering nearly five pages. There are also footnotes to every page of the history indicating the source of the information given.

In his Introduction the author explains that it was the change from wood fires to coal and the building of so many fireplaces (one to each room) in large Georgian houses, necessitating zigzagging flues of narrow dimensions, that brought about the increase in the number of climbing boys in the eighteenth and nineteenth centuries. It was Jonas Hanway, whose portrait appears as a frontispiece, who started the first crusade against the evil in 1770, and not until 1875 did climbing boys cease to be employed—a hundred years of hard fighting and much needless suffering.

The hardships of the chimney-sweeps are familiar to all readers of *Oliver Twist* or the poems of William Blake or the Life of Lord Shaftesbury, but not before has the whole history of the campaign been told with such detail as is done here. The struggle is traced through the efforts of philanthropists and voluntary societies, and through the attempts to organise the master sweeps and to promote the invention and use of machines which could sweep the narrow, crooked chimneys in place of boys. Each successive Bill introduced into Parliament is dealt with, and leading speeches are summarised. Both Houses come out badly, but the Lords the worse. In 1786, 1804, 1818 and twice in 1819 they rejected the Bill sent up to them by the Commons and, though they passed the Act of 1840, they reduced the age at which apprentices might be employed in sweeping chimneys from fourteen to ten. When Lord Shaftesbury entered the House of Lords, he introduced measures in 1851, 1852, 1853 and 1854 which were all rejected, and it was not till 1864 that he succeeded in getting a measure passed through both Houses. But whether there was legislation or not the employment of climbing boys went on. In 1853 (thirteen years after the Act of 1840) no less than 4,000 boys were said to be at work, and in the same year a sweep was charged at Nottingham Police Court for the most shocking cruelty to a child who was apprenticed when he was not yet six. The Act of 1864 was equally useless, and in 1872 there was an inquest at Gateshead on a child of eight taken dead out of a chimney. At long last, in 1875, came the Act which required every sweep to be licensed, and this proved to be effective : there was no recurrence of the evil.

The author brings out very clearly the reasons for the ineffectiveness of previous legislation. It was the feeble state of public opinion and the lack of any inspectors to enforce the law. It was not from want of knowledge of what the boys were suffering. These pages reveal authenticated cases of savage beatings, lighted straw or pins used on the boys' feet to make them climb, saltpetre rubbed into their legs to harden them, knee caps torn off, cancer caused by the working of the soot into the skin, children suffocated in hot flues. But all this tale of horror did not prevail against the supposed interests of West End mansions or the argument that, if boys were not employed in sweeping chimneys, they might become a charge on the rates.

It is impossible not to feel shame that this piece of social history—a disgrace to Great Britain—should have been investigated and told by a citizen of another country, and yet all readers will feel grateful to him for the skill and sympathy with which he has performed his task.

CLARA D. RACKHAM

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Volkswirtschaftliche Probleme des deutschen Aussenhandels. (Duncker & Humblot; Berlin and Munich 1948. Pp. 136. DM 10.—)

THE above publication is of some historical interest since it also represents the first volume to appear in the new series of the famous publications of the *Verein für Sozialpolitik* after its revival in 1948. The *Verein*, founded in 1873, had been *de facto* dissolved since 1933, and *de jure* since 1936. Between 1936 and 1947 there had been an interval at which there existed, on the one hand, only the official Nazi organisation of economists (more or less boycotted by respectable economists), and on the other hand a number of informal " academic circles " and discussion groups on the fringe of illegality. The deadlock was broken by a meeting in 1947 at Rothenburg, at which a manifesto for the "salvation of the German economy" was drawn up, which in many ways anticipated the subsequent currency reform. The text of this manifesto, as well as all the other documents relating to the Rothenburg meeting, are appended to the book here reviewed. A special obituary notice mentions two economists who were executed in the last stages of the Nazi regime, Professors Eulenburg and Jessen. The presidential address at the Rothenburg meeting (also reprinted), by Professor Zwiedineck-Südenhorst, is a somewhat heterogenous mixture of apology for failures after 1933, explained by "the powerlessness of professors," and claims that "the professors have been in the right with their advice."

The bulk of the book consists of the proceedings of the meeting at Marburg in 1948 at which the main subject under discussion was foreign-trade problems, and which was also the first constituent meeting of the newly revived *Verein für Sozialpolitik.* The presidential address at the meeting by Professor Adolf Weber is interesting in its description of an early memorandum on the need for currency reform presented in May and June 1945 by a group of academic economists to General Eisenhower. This did not even receive a reply, because, according to Professor Weber, "The Morgenthau Plan had a decisive influence even on men like President Roosevelt and General Eisenhower." Professor Weber computes the damage done to the German economy by the three years delay in currency reform at $10 billion, but gives no details how this has been computed. He also thinks that the currency reform plans worked out by the academic economists were in some respects superior to those put subsequently into operation by the military authorities.

The substantive nucleus of the book consists of a paper on German foreign-trade problems read by Dr. Fritz W. Meyer, and the subsequent discussion. Both the paper itself and the discussion are at a very high general level, and will repay study by anyone interested in the problems of foreign-trade controls, as well as students of the specific problems of post-war Germany. Dr. Meyer's paper amounts to a devastating and intellectually brilliant onslaught on the policies of the Joint Export and Import Agency, and on the defence of the then over-valued German mark (at 30 U.S. cents) as attributed to Mr. Camille Gutt, the Managing Director of the International Monetary Fund. Dr. Meyer objects to the import target of $2 billion as indicating "average European standards of living," and his own figure which he puts forward as a conservative estimate amounts to $5 billion of essential imports. His general description of what he calls "foreign trade in the dark" by the Joint Export and Import Agency is on liberal lines. He also strongly disagrees with the argument that the over-valuation of the German mark by the J.E.I.C. would result in advantageous terms of trade and thus compensate for export difficulties. It is interesting to see him state that the real trouble is not in the foreign control of the J.E.I.C., but in the fact of control itself. As he puts it:

> "The economic difference between the Western world and the East should not lie in the size of the rations, but it should lie in the existence or non-existence of any rationing system; it should lie in whether or not the individual is exposed to the discretion of the authorities."

From the discussion it is clear that the overwhelming majority of the participants in the meeting were opposed to the argument put forward by Dr. Meyer, and in favour of continued control of foreign trade. Only two of the speakers, Professors Rittershausen and Miksch, tended on the whole to agree with Dr. Meyer. Nine speakers disagreed; among them specially noteworthy were the argument by Professor Walter Hoffmann that in the present state of imperfection of data and violent disturbances it was not even possible to say that the mark was over-valued at $0·30; the argument by Professor Wessels that it was not foreign-trade controls which were wrong, but the policies of over-full employment and controlled inflation; the argument by Professor Meinhold that the increase in exports achieved by the low exchange rate would be inflationary; and the argument by Professor Schneider that a proper German foreign-trade policy depends very largely on the foreign trade policies of the other countries, and could not be discussed with reference to German problems alone. A somewhat independent line of thought is apparent in the contribution by Professor Egner that no German trade policy could make Western Germany viable as long as the separation of Germany continued, and that, therefore, the discussion did not serve any useful purpose.

One cannot help having some sympathy with the feeling, expressed by many of the speakers in the discussion, that Dr. Meyer's argument, in spite of its intellectual brilliance, takes somewhat lightly the transition required in translating from theory into the realities of Germany in 1948.

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Soviet Foreign Trade. By ALEXANDER M. BAYKOV. (Princeton University Press (London: Geoffrey Cumberlege), 1946. Pp. vii + 124. 11*s.* 6*d.*)

PROFESSOR BAYKOV in his earlier book, *The Development of the Soviet Economic System*, described the object of his researches as "an analysis of the Soviet economic system as such"; rejecting the three other approaches he distinguished: the theoretical, the political and the technical. Students of the Soviet economy have therefore come to expect from his pen analyses which are, from the point of view of politics, firmly unbiased and, from the point of view of economics, essentially descriptive. In this manner he successfully avoids the pitfalls that beset the politically minded economist, antagonist or protagonist. Nevertheless, much Soviet foreign-trade policy needs to be described in its political context.

In the first half of this book, devoted to the evolution and organisation of the foreign-trade system, Professor Baykov rightly adopts his policy of unpolitical description, but in the second half, where he analyses the trends of Soviet foreign trade, his approach may be questioned. One of the leading features of foreign trade in the U.S.S.R. is that it is subordinate to the general economic plan and that the economic plan is subordinate to political requirements. Professor Baykov describes, for example, (p. 47) the trade section of the First Five Year Plan as envisaging a favourable balance of trade mainly by the expansion of agricultural exports, and subsequently notes the non-fulfilment of the foreign-trade plan. Many would contend, however, that this was due not to fortuitous economic circumstances, as he seeks to show, but mainly to the decision of the XVth Party Congress of December 1927 to carry through collectivisation immediately. The political necessity of collectivisation superseded the economic considerations of the previously prepared plan.

While many readers would have preferred an approach that accepted the Soviet authorities' valuation of the inter-relation of economic and political policies, no one will gainsay Professor Baykov's perspicacity in analysing the purely economic trends of their trade policy. His chapter on "General Trends in the Development of Soviet Foreign Trade" is of the greatest interest and covers the subject exhaustively (occupying one quarter of the total text of the book). Of many interesting conclusions he draws from his analysis, that on the reasons for the sudden decline of trade after 1931 is especially to be marked.

The index of the physical volume of exports (1929 = 100) fell from 146·1 in 1932 to 90·5 in 1935, and of imports from 161·5 in 1931 to 51·9 in 1935. Soviet economists have ascribed this sharp reduction principally to the creation of new domestic capacity producing equipment formerly imported and the diversion of agricultural products from export to home consumption. Professor Baykov's view is that

> "it was due to considerations of foreign exchange rather than to the possibility of replacing imports by domestic production. The newly created productive capacities could hardly justify a reduction of imports to less than one quarter of their value in 1931; moreover, in 1936–38, imports were again increased."

The value of the book may also be seen in its presentation of data hitherto only available in Russian sources. A wider use of available statistics might, however, have been helpful to his study. At least one Soviet statistical table (p. 49), extracted from a work by D. D. Mishustin, could have been compared with the basic data in the Soviet official digest and the unjustified comparisons of Mishustin thereby revealed. Further, had he made use of non-Soviet sources, such as the League of Nations *International Trade Statistics*, a valuable survey might have been made of the effect of Soviet imports and exports on the trading partners. As it is, Professor Baykov leaves the reader with the view that at 2% of the world-trade turnover Soviet foreign trade was unimportant, whereas it was significant in some economies from large countries like Germany and the United Kingdom to small countries like Persia and Uruguay. Nevertheless, Professor Baykov rightly stresses the multilateral nature of Soviet trade: exports to the United Kingdom and Western Europe regularly exceeded imports, and the proceeds paid for imports from the United States, Australia, Czechoslovakia and elsewhere, where the balance of trade was persistently unfavourable to the U.S.S.R. It is interesting to note that under post-war conditions the position is reversed. According to the United Nations *Summary of World Trade Statistics* in the first nine months of 1949, the U.S.S.R. had a large favourable balance with the United States and a large unfavourable balance with the United Kingdom as it has with other Western European countries, notably Belgium.

The book does not, of course, deal with such post-war developments, and it is perhaps unfair to contrast his chapter on "Post War Prospects" with present reality, written as it was in the immediately post-war period when few data were available. The fact that actual developments have been the opposite of his forecasts is due not to his erroneous judgment but to the unforeseeable behaviour of Soviet policy.

Soviet foreign trade to-day still follows largely the dictum Professor Baykov gives : in the Soviet economic system export trade is solely a means of paying for indispensable imports. But with the physical volume of Soviet trade in 1949 more than double its pre-war volume, the greatly expanded trade with the people's democracies of Eastern Europe needs to be regarded in a wholly different category.

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Surrey.

Customs Valuation in the United States. By R. E. SMITH. (Chicago : University of Chicago Press (Cambridge University Press), 1948. Pp. xv + 380. 42*s.*)

THIS book has two main themes : the selection of a basis for dutiable value and the administration of selected bases. There is a full discussion of all the various types of basis, and although twelve can be distinguished (p. 27) the main headings are foreign value of some kind, United States value (selling value of foreign goods in the United States less assumed margins), American selling price (of home-produced articles similar to imported goods) and arbitrary valuations of various kinds. The author traces in great detail the legal history of the change from "specific purchase price" (that is, actual cost to the importer) in the early part of the nineteenth century to the general reliance in modern times on foreign or export value, an approximation to market value abroad. Although the major part of the book is devoted to tracing this historical development, outlining the current situation and examining the ramifications of administering Customs law, two useful chapters at the end (Chapters X and XI) deal with valuation practice in other countries and with the author's own suggestions for reform.

The painstaking and scholarly treatment of the subject-matter must obviously give this book high marks as a piece of research. Economic historians, in particular, will find it most interesting. But even more important for the general reader will be the background it supplies to the present agitation for reform of American Customs valuation. The fact that Americans are being told from observers *inside* their country that their of general rather than particular United States importance, comes in the first five chapters. After the first introductory chapter, referred to above, he turns in the second to restrictive agreements. Here he makes, and to my mind substantiates, one point of prime importance: he considers that to prevent monopolistic agreements it is indispensable that the basic law should prohibit in broad and not in specific terms, and that illegality should be judged by effect; otherwise " the ingenuity of businessmen " and of their lawyers " would soon devise new ways of accomplishing restrictive ends, and the evolution of business methods would soon give the old prohibitions unforeseen consequences." But he suggests that a list of practices normally undesirable should also be codified, putting on the participant the onus of proving that any particular example of such practices is desirable. This chapter, besides much else of value, also contains a useful section on how to detect collusion, and on how practices not undesirable, or even desirable in themselves, such as the circulation of information on prices and on cost accounting, may help tacit collusion.

Chapter III lists and discusses the exemptions to the Anti-Trust Laws for private agreements in the United States; a substantial part of it is of general interest.

Chapter IV contains a long, closely argued and extremely interesting discussion of the problems presented by large concerns. I cannot deal adequately with this highly controversial subject in the space of a review. Dr. Corwin Edwards divides the subject into three main headings:

(*a*) Monopoly (and monopsony), where one concern controls (or buys) a substantial part of the output of a product. Here he distinguishes between the single-plant monopoly and the large business unit with many plants, and concludes that, for the latter at any rate, much might be done to break bigness without decreasing efficiency, but that ceilings on size are impracticable and undesirable, and that policy must proceed by attacks upon particular examples of excessive power, the test being the power to exploit and the power to coerce. I found this section less convincing than most of his book, not only because of the difficulties of applying his test. He does not really discuss whether oligopolistic competition is better or more efficient than monopoly; yet surely no other form of competition could be achieved by breaking up many plant monopolies. And, even if it is, may not a hindrance to growth be more serious than Dr. Corwin Edwards fears, even for his careful proposals designed to minimise this danger? And may not a case-by-case approach increase lobby-ing ? Finally, can one safely leave decisions on these points to the Courts ?

(*b*) Vertical integration; here Dr. Corwin Edwards is critical of disproportionate integration, where a large concern buys from or sells to its own competitors at some stages, and particularly where at one stage it has a legal monopoly and at others operates in competition with other firms. He would prohibit a concern which enjoys a monopoly at one stage from also undertaking commercial activity in which monopoly is unlawful, and he would challenge, though not prohibit, substantial disproportion at different stages. Here I do not accept his argument; it is merely the monopoly at one stage, not the disproportions, which gives the power to exploit. It may be technically impossible to control effectively at one stage only where a concern operates at different stages; and this is an argument against allowing monopolies created by law at one stage from operating at other stages. But the basis for such a policy is slightly different from that given by Dr. Edwards.

(*c*) Giant size, even in diversified fields, where the strength is derived from the variety of tactics that can be used, including an advantage in litigation, politics, public relations and finance. Here the present law provides no protection, and should, Dr. Corwin Edwards considers, be amended or supplemented. Besides proposing various environmental changes designed to remove the conditions and privileges that strengthen large and weaken small corporations, he would establish a rebuttable proposition against bigness in excess of some relatively high level of size, a size " appropriate to technological and administrative efficiency in our larger scale industries." There would be relatively few cases to handle. Some of the comments I made on (*a*) above also apply here.

In Chapter V Dr. Corwin Edwards deals with safeguards against coercive and exploitative behaviour on the part of large concerns whose size must be tolerated for technological and administrative reasons, if for no others. He believes that " although such safeguards are desirable, the possibility of devising them is very limited." For " nothing would be gained by using the power of government to deprive large enterprises of a venturesome spirit or to induce them to compete half-heartedly, with a regard for the interests of their competitors similar to that which is produced by collusive agreements." Something can be, and under existing laws is, done to prevent coercive activities; this could be strengthened in some ways. Exploitative activities are more difficult to deal with. I would particularly draw readers' attention to pp. 182–5 dealing with the possibility of control through government surveillance. Dr. Corwin Edwards particularly attacks government participation in management. Among other excellent remarks he says that "such arrangements are frankly based upon an inability to prescribe in advance the public policies to which business shall conform, for if such prescription is possible other methods of regulation are sufficient. In the absence of a definite public policy, the government officials who assume managerial responsibility are unguided and unchecked, relieved of public responsibility for their acts and surrounded with a protective cloak of secrecy which conceals their errors and misdeeds. Protection of the public interest becomes a gamble upon their foibles."

With the remaining three chapters I can deal only summarily; they are more particular to the United States than the earlier chapters. Chapter VI, on entry and access, contains some interesting points in the earlier part, but is less noteworthy or novel on patents. Chapter VII, on the relation of the competitive policy to regulation in other fields, includes a plea for using as far as possible global rather than specific controls. I would accept much of his general argument, though I do not believe that taxation, government buying, etc., can really serve as a substitute for price control where privately owned monopolies are established; but I fully agree with Dr. Corwin Edwards's objections to price control. Surely, if there is a case, as there often may be, for monopoly operation, the real alternative to be considered is publicly owned monopolies?

Chapter VIII, on administration, lists six administrative functions implicit in a policy of competition, criticises the present method of administration in the United States, in particular the inadequate staff (about 310 in the Anti-Trust Division of the Department of Justice and 670 in the Federal Trade Commision), argues that the law-enforcement agencies should be equipped with other weapons in addition to litigation, and urges the establishment of an agency to carry full responsibility for developing and applying the policy of competition. But Dr. Corwin Edwards concludes, no doubt rightly, that "in spite of gaps in policy and difficulties in administration, the United States is foremost among nations of the world in reliance upon a policy of competition, in the extent of the laws with which it has supported that policy, and in the vigour and power of the administrative agencies created to apply these laws."

No review can do justice to the vast number of points so admirably and succinctly handled in the book. It is one that should be read by all those interested in the control of monopoly.

RUTH COHEN

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Cambridge.

The History of the Gas Light and Coke Company 1812–1949. By STIRLING EVERARD. (London: Ernest Benn, 1949. Pp. 428. 63*s*.)

THERE are alternative ways of writing the story of a corporate undertaking. This one is written primarily as a series of biographical studies of the character and work of the successive Governors who controlled the Gas Light and Coke Company from its inception in 1812 to its nationalisation in 1949. But behind the human figures who dominate this history the author sketches in the changing picture of what began as the first gas company in the world and finished as the largest. The human story is brightly and competently told; sufficient is revealed of the background to show in some detail what remains little-known territory in our economic history.

The group of merchants and professional men who founded the "Chartered Gas Company" towards the end of Napoleon's wars had to meet formidable problems. Public gas supply was an unknown technique, an entirely new commercial venture. The company had to translate the wild optimism of an inventive genius into a business enterprise, by trial and error, experiment and improvisation. What was the best type of carbonising plant? How could gas be purified effectively and conveyed safely into people's homes? What was the optimum size of unit in gas supply? How should the accounts be kept? How could gas charges be levied (and collected) before gas meters existed? There were problems, too, which are less immediately obvious in retrospect—for instance, how to find skilled mechanics in a London as yet untouched by the industrial revolution which had already transformed the Northern towns. And there was direct competition to be faced; for other gas companies, with or without statutory powers, were soon laying their pipes in the same streets as those of the Chartered Company.

By the middle of the century, however, competition was being replaced by local monopoly, subject to some degree of statutory regulation. Direct competition between public-utility undertakings, duplicating mains in each street and increasing the margin of unused capacity, is a text-book case of waste of resources, where the consumer is better served by regulated monopoly. But this history reveals that, at any rate in the short run, gas tended to be cheaper under direct competition, and that the pressure to establish local monopoly came not from consumers or public authorities, but from the gas companies themselves. Did the consumer lose or gain in the end from monopoly in gas supply?

One way of ending direct competition was to buy out the competitors; this, from time to time, the Gas Light and Coke Company did. But long after local monopoly had been established, the same process of absorbing other undertakings continued—between 1869 and 1884, for example, the business of the Company increased elevenfold, largely as a result of amalgamations—and this form of expansion continued into the 1930s, when the Gas Light and Coke Company was supplying one-sixth of all gas sold in this country, serving 1½ million consumers between Windsor and Southend, and controlling thirty other gas companies through a holding company. What were the motives behind this continued expansion? The search for greater profits? The belief that size means strength or stability? The pursuit of greater efficiency? And did size yield greater efficiency? This book provides no answers, but it does give clues enough for further investigation.

Barely a generation after direct competition was brought to an end in London's gas supply the competition of electricity had to be faced—and grew increasingly severe over the succeeding years. The Gas Light and Coke Company deliberately avoided going into the electric-lighting business, as its contemporary companies in America, for instance, were widely doing. Why? The management seems to have combined enterprise—for instance, in starting public gas supply in the first place or, in later years, building the huge Beckton gasworks down the river, to supply London through great trunk mains—with a certain conservatism—as in discouraging early consumers from using gas for purposes other than lighting, or in eschewing any venture into electricity supply. Was it that policy was dominated by men who were first and foremost gas engineers?

Having, however, decided to keep all its resources in gas, the Company began to show outstanding energy in fighting the intruder. Gas-lighting methods were improved, new non-lighting loads built up, the pre-payment meter adopted to tap new strata of demand, and the arts of publicity and service increasingly applied. Competition indeed proved, and has remained, the life of trade in gas supply. But in one direction the Company was not among the pioneers. Electricity made great headway after the First World War by adopting " promotional " tariffs, which have a justification both on the sides of cost and market conditions; the Gas Light and Coke Company left other undertakings to give the lead in responding with promotional gas tariffs. Why? Was it the engineers again? Or the accountants?

The History of the Gas Light and Coke Company is a fascinating book, combining wit and scholarship. Perhaps it may encourage further studies of public-utility economics, for it prompts more questions than it answers.

PHILIP CHANTLER

London.

The Economics of Agriculture. By R. L. COHEN. (Cambridge Economic Handbooks, London: Nisbet, and Cambridge University Press, New Edition, 1949. Pp. xii + 216. *6s.*)

IN a short book on this subject, on which there are, in this country, comparatively few text-books of native origin and no established conventions as to method of treatment, an author faces the problem of allocating a restricted amount of space among a series of topics which compete for inclusion. He must decide whether to give the reader a theoretical exposition or an account of the economic organisation of agriculture, or in what proportion to blend these two ingredients; and how far to mix them with an analysis of the concrete economic problems of the farming industry at different times and places and with criticism of actual and possible measures of State policy. Whatever choice he makes, he may encounter criticism from readers and reviewers who would have preferred a different emphasis.

Miss Cohen's book, which was first published in 1940 and now appears in a revised edition, is written with primary reference to British conditions, but it is intended, the author explains, " to give some idea of the economic problems associated with agriculture in all of the main types of farming in the world." It is divided into three sections. A first group of chapters is concerned with agriculture under static conditions, and discusses the theory of diminishing returns in relation to intensity of production and localisation, the factors affecting the sizes of farms and of farm businesses, and agricultural marketing. Then follow chapters devoted to the adjustment of agriculture to changing economic conditions, and analysing the nature of supply and demand for agricultural products and the effects of seasonal, secular and cyclical changes. The book ends with a critical survey of "State Intervention in Agriculture."

Miss Cohen approaches the subject as an economic theorist. The task which she seems to have set herself is that of working out the application of elementary economic analysis to the special conditions of agriculture. Her book is an able and lucid study of this theme. The differences between agriculture and other industries are explained, and the characteristic features of agriculture, deriving from its dependence on matural processes, are shown to create a characteristic type of enterprise, standing in a characteristic relation to the rest of the economic system and with its own characteristic type of reaction to economic changes. The familiar economic problems of the farmer are seen to depend mainly on the scale of his operations, his predominant use of family labour and on the nature of the demand for his principal products.

This method of treatment naturally leads the author to give greater prominence, in much of her exposition, to abstract argument than to concrete fact, and a reader whose eye is primarily on practice may be inclined to complain that she shows less interest in agriculture for its own sake than as the basis for an exercise in economic theory. He will, for instance, learn more about von Thünen's theory of agricultural localisation than about the actual facts of localisation in different parts of the world, and he will find more attention given to the economic factors theoretically affecting the size of farms and farm businesses than to the social and legal influences which he is told (p. 71) are often more important in practice. One of the most noticeable omissions is the absence of any systematic discussion of land tenure; a brief mention is all that is given (p. 69) to the long series of statutes on this subject which make up the greater part of the agricultural legislation of this country in the period before the First World War and to the not inconsiderable addition made to it by the latest Agriculture Act.

To rectify these omissions would obviously have meant either a longer book or the exclusion of something else, and it is not obvious that any of the existing material could have been left out without disadvantage. But greater attention to actual situations and concrete issues might, nevertheless, have enabled the author to illuminate a little more fully some of the problems with which her book sets out to deal.

Most of what Miss Cohen has to say on questions of agricultural policy is contained in her final chapter. It is a wide field to cover in one single chapter, and the task does not seem to have been made easier by the attempt to incorporate the revisions necessary in order to bring the discussion up to date without modifying the original framework of the chapter. The reader is given an analytical summary which sorts out and classifies the different kinds of things Governments may try to do in relation to agriculture, but there is no general picture of the whole complex of measures of which British agricultural policy, either before or since the war, has been made up. The treatment is somewhat abstract and condensed, and the reader who turns to this chapter for a discussion, in the context of current experience, of such problems as those of guaranteed prices and consumer subsidies, may feel some disappointment when he reads (p. 209). "These are complicated questions into which we cannot further enter here."

A fuller treatment of these problems would probably have made the book welcome to a wider public. As it is, however, it will certainly remain an excellent text-book for students and specialists, for whom, presumably, it is primarily intended, and among whom the reputation of its first edition is already firmly established.

E. F. NASH

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Readings on Agricultural Policy. Edited by O. B. JESNESS; sponsored by the American Farm Economic Association. (Philadelphia: The Blakeston Company, 1949. Pp. xi + 469. $4·75.)

THESE articles on agricultural policy have been drawn largely from the *Journal of Farm Economics*, from *Post-war Agricultural Policy*, prepared in 1944 by the Committee on Post-war Policy of the Association of Land-Grant Colleges and Universities, and from *The Farm Policy Forum*, published in 1948.

The collection is divided into four parts. First come five background articles, all, except the first, of a somewhat popular sort. The second part, on price and production adjustment, occupies nearly 200 out of the 440 pages of text. It begins with a useful summary of agricultural policy between the wars by Dr. Chester C. Davies, and continues with a great many articles which mainly either criticise the method of helping farmers by aiming at "parity prices" achieved by production restriction, or suggest alternatives. Most of the articles make sensible suggestions; many of them are well put. But most were written without regard to the others; and many of the same points are made over and over again. This is not the fault of the authors, who were not writing for this collection. The Editor, I feel, has included too many similar articles. The third part, on international trade and relations, contains articles which, although written between 1945 and 1948, are already somewhat dated. This applies far less to the last article in this section, which contains a useful historical summary by Drs. Edward G. Cale and Oscar Zaglits of the participation of the U.S.A. in inter-Governmental commodity-control schemes. The last part, called Land and Rural People, is mainly devoted to problems on the ownership and use of land; one, by Dr. L. C. Gray, provides a valuable summary of the problems facing the United States in this field, and how they are being dealt with. But it also contains a few articles on the problems of farm workers and of rural people generally. That from *Family Farm Policy* includes some useful statistics and a good brief summary of desirable measures. The remainder are very slight.

This collection will not be as valuable as those made for the American Economic Association and also published by the Blakeston Company. Many of the articles are too short, and often too topical and popular to bear reprinting. In parts, also, there is a great deal of repetition. The earlier Blakeston collections were more theoretical and more solid. On such a topic as agricultural policy it is difficult to produce a volume of articles written at different times, for different audiences, which does not appear rather slight.

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The History and Social Influence of the Potato. By REDCLIFFE SALAMAN, M.D., F.R.S. With a chapter on Industrial Uses by W. G. BURTON. (Cambridge: University Press, 1949. Pp. xxii + 685. 50*s.*)

IT is as though George Meredith had been summoned from the shades to write a romance *Solanum Tuberosum*, or *The Amazing Tuber*. " You see," said Mrs. Mountstuart, " it has an eye." We drive at it from every angle, archæological, literary, scientific and economic, and beginning with devil-worship—devils of the Brazilian forest we find surcease in alcohol. Archæology subserves anthropology, literature is supported by art with van Gogh's " Potato Eaters " for frontispiece, the scientific team includes herbalists and botanists, chemists and dieticians. The economist supplies theory and statistics—and history, hundreds of pages of this last. It is a rich feast, with its thirty-one plates, 105 figures, analytical index and indexed bibliography, and it is inscribed to the memory of Sir Daniel Hall.

The book divides half-way, the first half being mainly scientific, the second mainly economic; and in the former I found two chapters of outstanding interest. Chapter 8 Names and Aliases, and Chapter 10 Potato Varieties (with its account of the various potato diseases). We all eat bread, and next to none of us have grown it. We all eat potatoes, and most of us raise them, being conscious at first hand of this season's shortage and last season's glut. When harvested, they need no processing—were tobacco in the same case, the budget would be fatally unbalanced.

The name of the potato among the Incas of Peru was *papa*, and as such the root was taken by the Spaniards to Europe, but there it had to be dropped because it competed impiously with Papa, the Pope. England ended with "potato" from *batata*, the sweet potato, a native of the West Indies, with which it was confused. When the American colonists introduced *Solanum Tuberosum* from the British Isles, they called it Irish potato. Germany arrived at *Kartoffel* via *cartoufle* (Fr.) *tartuffo* (Ital.) (= truffle or earth testicle). The elegants of Paris found the new root gross, and at first named both it and the Jerusalem artichoke *Topinambour*, after a captured Brazilian warrior; then leaving this name to the artichoke, France adopted *pomme de terre* for the potato, from the Dutch *Erd-appel*. Being a very common food it had a variety of nicknames *e.g.*, *pratie* (from *patata*) and *tater*, *Murphy*, cf. Paddy, or was one Murphy a particularly successful grower? and *spud* from the digging fork (cf. spade). In the Slavonic countries it was named after the Greek *βυλβος*.

The potato, since it would grow at a great altitude, helped the aboriginals across the Andes; but though undoubtedly its provenance is the Andes, it is in dispute whether it came to Europe from the North or South of the mountain chain. Russian scientists for botanical reasons urge the latter; our author, however, contends that the time factor is against this view, and thinks that potatoes of the Chilean type may have reached the Spanish Main via Venezuela and been taken thence to Europe. What is certain is that the potato was new to Europe but known in Spain as early as 1570. Professor Earl Hamilton has found mention of potato purchases by the Hospital of Seville for 1573.

In Chapter 10 Dr. Salaman speaks with special authority. For the potato is not only his hobby but his profession : to the fight against potato disease he has devoted his life. Chronologically the story runs thus. About 1775, with the agricultural revolution in spate, the appearance of leaf curl, a virus disease; followed in 1845–46 by the pandemic blight *phytopthora infestans*, which wrecked Ireland; followed at the close of the century by a new enemy, wart disease. Plant breeders and seedsmen, assisted finally by laboratory research, made headway by selecting varieties resistant to the several diseases, but all in turn fell down. Either they succumbed to curl or proved susceptible to blight or collapsed before a new enemy

The reply of modern science has been as follows. Against wart disease, a fungus, a pest-control inspector discovered an immune variety, which was tested out on the trial grounds of John Snell in Ormskirk, Lancs. The Potato Synonym Committee (with which our author was connected) continued the work, obtained the removal of numberless pseudonyms "with help from leading seedsmen and bitter opposition from the trade," and required for every new variety a certificate of resistance to wart disease. Mendelian-trained botanists with enlightened Government support, accomplished the job.

Against potato blight, also a fungus, blight-resistant varieties, bred at Barley, the author's home, were transferred in 1926 to the Potato Virus Research Institute at Cambridge, which he directed. Resistant types were bred from wild varieties hybridised with domestic stocks. But this was just one part of the battle front, and work once done was not done for ever. New biotypes of fungus appear, which have to be studied and countered.

Leaf curl, a virus, was originally regarded by seedsmen as degeneration; science has shown it to be an infection by a minute germ called a virus. With wart or blight fungus you can select infection-free tubers, but in curl all the tissues of the plant are infected. It is a dual battle against the carrier green-fly and its infected food. The goal is a virus-free stock, raised on aphis-free land. An approach to this has been found in Islay, a western Isle of Scotland, happily located between Northern Ireland and the Scottish Highlands. Curl reduces the yield by 10–20%, and therefore the value of pure stock is two fold—it releases good land for other uses, and it opens up the possibility of a large export trade in virus-free stock.

But there are two new enemies: the Colorado beetle, which can now be air-borne, and eelworm, against both of which science is deploying its resources. The potato, says our author at this point, is worth fighting for because it responds so well to treatment. " The prominent position which it has made in the lives of the people, is due as much to the inherent plasticity of the species, as to man's ingenuity in making use of it."

At Chapter 11 Dr. Salaman turns economic historian, and writes as such till nearly the end. There are chapters on Ireland, century by century; chapters for Scotland, the Highlands and Lowlands; chapters for England and Wales, with short chapters also on St. Helena, Tristan da Cunha and Jersey. He might have taken us through Europe, country by country, but he has mercy on us, and contents himself with the statue of Sir Francis Drake, " who spread the use of the potato in Europe A.D. 1580 " in Offenberg, Baden, which the Nazis pulled down in the late war.

The broad idea of his history is quite clear. In some countries, outstandingly Ireland, the potato was the instrument of domination, exploitation and disaster. In others, such as the Scottish Lowlands, Lancashire and Jersey, it was a valuable cash supplement in an enlightened rural economy. His feeling for Ireland is expressed in the sentence " There are peoples, of which the Irish and the Jews are outstanding examples, the major part of whose long history is a record of suffering and tragedy "; and he is determined to prove his thesis to the hilt. I think he does, but at the expense of balance, and by the inclusion of much extraneous matter, provided only that it includes an Irish wrong. I think he would regard it as wicked to suggest that a recklessly breeding country was rather fortunate in having as neighbour an Industrial England, which provided a good market for its provision and good jobs for its navvies, and superlatively fortunate in having across the ocean a land of refuge with unbounded opportunities. Sometimes I feel the author, in his effort to get Ireland right, gets England wrong. " At the time of the Union (that is, 1800) about nine-tenths of the Irish population was subsisting almost entirely on a single source of food, the potato, whilst at home in England the working-classes were a meat-eating people who insisted on wheat bread and beer. . . . Neither Irish farmer nor peasant had any security of tenure, a benefit which the unwritten custom of centuries had secured for the English." His picture is too fair for England, and too black for Ireland. For surely neither Lord Palmerston nor Lord Castlereagh were landlords of the type which he chastises.

I confess that I was relieved when towards the end of the book he turned to other things: to implements, the statistical relation between potato and bread consumption, war-time allotments and, a charming finale, The Potato in the Realm of Art. When the mahogany dining-table came into fashion, there had to be dish-rings to keep the potato from staining the table. "Hot Potatoes, buy my Hot Potatoes." You did, if you were escorting a lady, in order that she might put them in her muff to keep her hands warm. I remember as a young man walking in Switzerland through a field of beautiful flowers, without knowing that they were potatoes. Still less of course did I know that in order to popularise the potato "Louis XVI accepted a bouquet of potato blooms from Parmentier, and Marie Antoinette wore one in her hair."

In the index to the *Wealth of Nations* potatoes is the entry preceding Potosi, but I was wrong in expecting that whatever else might be omitted by Dr. Salaman, this quotation at least would figure at full length. "The chairmen, porters, and coal heavers in London, and those unfortunate women who live by prostitution, the strongest men and the most beautiful women perhaps in the British Dominions, are said to be, the greater part of them, from the lowest rank of people in Ireland who are generally fed with this root." (*Wealth of Nations*, Bk. I, Ch. XI, Pt. II. Ed. Cannan, Vol. I, p. 162.) It was not, I suggest, from fear that Adam Smith advocated the Union.

C. R. Fay

Cambridge.

NOTES AND MEMORANDA

OBITUARY

DR. J. N. KEYNES (1852–1949)

DR. JOHN NEVILLE KEYNES was born at Salisbury on August 31, 1852, to John Keynes and his wife Anna Maynard Neville. The Keynes family came originally from Normandy, and the name is said to be derived from that of a place called Cahagnes in that province. Dr. Keynes's father inherited a manufacturing business, but early relinquished it to his brother and developed a line of his own in scientific floriculture. In this he won a high reputation, and near the end of his life became Mayor of Salisbury. Among the neighbours and friends of the family were the Fawcetts, and Henry Fawcett (whose father William had founded a drapery business in the town) was influential in persuading John Neville Keynes's parents to allow him to embark on an academic career.

After studying at University College, London, Keynes entered Cambridge University as a member of Pembroke College. He took the Moral Sciences Tripos, which then included political economy, and was Senior Moralist in 1875. In 1876 he became Fellow of Pembroke, and in the same year Fellow of University College, London. In the course of his fellowship he filled the office of Bursar at Pembroke.

In 1882 Keynes married Florence Ada, daughter of the Rev. Dr. John Brown of Bedford. His wife, who survives him, has played a prominent part in the municipal life of Cambridge, has been mayor of the town, and has published, in 1947, a most interesting book of studies entitled *By-ways in Cambridge History*. (I have to thank Mrs. Keynes for her kindness in giving me information and answering my questions about incidents in the life and work of her husband which are not on public record).

Shortly after his marriage Keynes and his wife moved into the house, 6 Harvey Road, which he had built. There he spent the rest of his life, and there Mrs. Keynes still dwells. The original wall-paper (one of Morris's) remains on the walls of the dining-room, little the worse for its sixty-eight years of wear. The Keyneses had two sons and one daughter. It is needless to enlarge here on the splendid gifts and the manifold practical and theoretical achievements of the eldest son, John Maynard, who became Baron Keynes of Tilton. The younger son, Geoffrey, a distinguished surgeon, is well known to another circle as a bibliographer and authority on the works of William Blake. The daughter, Margaret, married the physiologist Professor A. V. Hill. Intellectual distinction persists in the next generation, for two grandsons are numbered among the younger Fellows of Trinity and one among those of King's, and all three appear to be on the threshold of brilliant scientific careers.

Keynes's activities at Cambridge were a mixture of teaching, research, and administration, all performed with great thoroughness and efficiency. In Keynes's early years at Cambridge G. F. Browne, afterwards Bishop of Bristol, was working at a scheme for local examinations and lectures under the auspices of the University. Keynes worked with Browne, and succeeded him as Secretary to the Local Examinations and Lectures Syndicate when an ecclesiastical appointment took Browne away from Cambridge. Keynes was university lecturer in Moral Science from 1884 to 1911, Chairman of the Special Board of Moral Sciences from 1906 to 1912, and Chairman of the Special Board of Economics and Politics from 1908 to 1920. He became Registrary of the University in 1910, and held that office until 1925. Before his appointment as Registrary he had already acted as Secretary to the Council of the Senate. After his retirement, at the ripe age of seventy-three, he enjoyed another twenty-four years of mental and physical health and happiness, paying until 1939 frequent visits to the Continent, where he made an extensive collection of the butterflies of Central Europe. Until an advanced age he played golf, often with his friend and colleague in moral science, the late Professor Sorley. He was interested to the last in his very fine collection of stamps.

Keynes was actively involved in the proceedings which led to the separation of economics from moral science at Cambridge. These began with the presentation to the Council of the Senate of a memorial, signed by 131 prominent members of the University, asking for the appointment of a Syndicate to inquire into and report on the best means of enlarging the opportunities for the study in Cambridge of Economics and associated branches of Political Science. Keynes's name is not among the signatories; but, when such a Syndicate was appointed in May 1902, he was one of its members. The Syndicate reported on March 4, 1903, recommending the foundation of an Economics Tripos, and Keynes signed this report. On October 21, 1903, the General Board issued a report recommending the establishment of a Special

Board for Economics and Politics. Keynes was appointed to this new Board on June 13, 1906. The first examination in the Economics Tripos was held in the Easter Term of 1905, and Keynes was an examiner then and again in 1907.

Keynes's most important contributions to knowledge were in formal logic and in the logic and methodology of economics. His *Studies and Exercises in Formal Logic* was first published in 1884. In its original form it contained 414 pages, but it was revised and enlarged in successive editions and contains 548 pages of a larger format in the fourth and final edition of 1906. It soon became a standard text-book, and it has been reprinted in recent years.

It is an extremely good book, far and away the best which exists in English on the old-fashioned formal logic and its main developments in the nineteenth century. Keynes settled a number of ancient and troublesome controversies by drawing the necessary distinctions and embodying the results in clear definitions. In this respect his contributions to the discussion of connotation and of existential import and his distinction between what he called " conditional " and " hypothetical " propositions were particularly valuable. Another admirable feature of the book is the treatment of logical diagrams, with its clear recognition that Euler's diagrams have certain existential implications which need to be made explicit if fallacies are to be avoided. In this connection Keynes showed that, except in the case of the universal negative proposition, an *alternation of several* of Euler's diagrams is needed to cover precisely the amount of knowledge and ignorance expressed by each of the four standard forms A, E, I and O. The extreme clumsiness of this system for diagrammatic illustration of the various moods and figures of the syllogism then becomes painfully apparent.

In the first edition of *Studies and Exercises* the last Part, consisting of 125 pages, is devoted to a treatment of the logic of " complex propositions," *i.e.*, propositions which are in the A, E, I or O form but whose subjects and/or predicates are (in the most general case) disjunctions of conjunctions of simple terms and their contradictories. In the latest edition this topic is relegated to a long Appendix, but it remains an important part of Keynes's contribution to formal logic. The problem had been treated in England in various ways by de Morgan, by Boole and by Jevons, and in Germany by Schröder, and Keynes was, of course, well acquainted with their work. His originality consisted in devising and clearly formulating simple, elegant and powerful methods of treatment, which involve no technical mathematics and depart to the least possible extent from the traditional logic of " simple " propositions.

A great merit of *Studies and Exercises* is the vast number of interesting and ingenious problems and theorems in formal logic which it provides as practice for the student. Very many of these are marked " K," and these were devised by Keynes himself. The only rivals to them are the numerous examples marked " J." These are due to that very great Cambridge logician W. E. Johnson of King's. Keynes always received and always generously acknowledged great help and inspiration from Johnson. In this connection I cannot resist quoting from a letter which I received from the late Lord Keynes soon after Johnson's death in 1931 :

> ' He used, when I was a child, regularly to lunch at Harvey Road with my father; I should think almost once a week. My father was then writing his book on logic, which would frequently be a matter of conversation and discussion. They seemed to me in those days to sit endlessly over the meal, and I would be in a fidget to be allowed to get up and go. . . .'

When Keynes became Registrary Johnson took over from him the task of lecturing on Logic for the Tripos.

Keynes's one book on Economics, *The Scope and Method of Political Economy*, was published in 1890, and went into a second edition in 1897. My opinion on points of economic detail would be of no value, but, speaking as an interested outsider, I may say that the book seems to me to have the characteristic merits of Keynes's logical writings. It replaces vagueness and muddle, which had led to long-continued and profitless controversy, by clearly drawn and defined distinctions. The two conceptions of economics as a positive, abstract, deductive science, on the one hand, and as an ethical, realistic, inductive science, on the other, are clearly distinguished and discussed in the Introduction. Then a valuable distinction is drawn between economic uniformities, economic ideals, and economic precepts, and in the light of this the relation of political economy to morality and practice is fully discussed. In the next two chapters Keynes considers the nature of economics as a positive science and its relation to general sociology. After a chapter on the nature and limitations of definitions in political economy there follow three chapters on method, one on the method of " specific experience " generalised inductively, one on the deductive method, and one on symbolical and diagrammatic methods. Next comes a chapter on the relation of political economy to economic history, with a valuable appendix on the limits of the validity of economic doctrines. The book ends with a chapter on the use of statistics in economic inquiries, followed by a note on the main precautions needed in using statistics in economic reasoning. Keynes's book probably remains to this day the most important contribution made by an Englishman to a topic which has been much neglected in this country, though cultivated intensively by German economists. Unfortunately, both of Keynes's books are at present out of print.

Keynes supplemented this book by contributing a number of important articles on allied topics to Palgrave's *Dictionary of Political Economy.* His main interests are well shown by the following titles: *Analytical Method*, *A posteriori Reasoning*, *A priori Reasoning*, *Deductive Method.* He corresponded frequently with Palgrave, and a considerable number of Palgrave's letters to him survive among his papers.

The large and distinguished congregation at the memorial service in Pembroke College Chapel, and the moving brief address by the Master, bore witness to the affection and respect in which Keynes was held. It was a fitting tribute to an eminently useful unpretentious life of clear, honest thinking and hard efficient work in the service of science and of the University of Cambridge.

C. D. BROAD

Trinity College,
Cambridge.

Professor Pigou adds the following personal recollections of Dr. Keynes :—

I have two principal memories of Dr. Keynes, first as having examined with him in the early days of the Economics Tripos, secondly as having sat on the Economics Board for a number of years under his chairmanship.

The first time I examined, as a very nervous recruit, Dr. Keynes was chairman of the examiners, and I corrected some papers along with him. I remember feeling very shaky about my placings and a great sense of relief when I found that they agreed substantially with his. He had what, I imagine, was a very unusual method of dealing with examination papers. He would split them up, reading everybody's answers to the first question separately, mark them, and then go on to treat all the other questions in the same way. I don't know whether even he would have found this method practicable with the present enormous number of candidates: but in those days the Economics Tripos was very small. Nobody working with him could have failed to be impressed with his carefulness and fairness.

When Marshall retired from the professorship, Ward, Master of Peterhouse, became chairman of the Special Board of Economics and Politics for a few years. Dr. Keynes succeeded him in 1908, and continued to preside over a very youthful Board until, to everybody's extreme regret, he insisted on resigning in 1919. I always think of him as far and away the best chairman I have ever had to do with. Perfectly courteous and always completely unruffled, his mere presence seemed to prevent pointless loquacity; so that everything went through smoothly and all with surprising speed. I personally owe him a very great deal for help and guidance in the days when I was the youngest professor in the youngest tripos.

A. C. Pigou

King's College,
Cambridge.

Clara E. Collet (September 10, 1860–August 3, 1948)

In the account of the Society's Jubilee (Economic Journal, 1940, p. 403) it was stated that, of the two hundred persons present at the meeting (November 20, 1893) to found the "Economic Association," "sixty-three were already sufficiently distinguished fifty years ago to be particularly mentioned by name." Clara Collet was one of eight of these who survived in 1940; her death reduced the number to three.[1] "Miss Collet alone can claim that she has contributed both to our first and our fiftieth volume." In the first she wrote on *Women's Work in Leeds*, in the fiftieth an obituary notice of Henry Higgs.

It is not necessary to discuss whether Miss Collet was primarily economist, statistician or Civil Servant, for she states (*R.S.S. Journal*, 1945, p. 483) that in 1885 she began to describe herself as a "student of social conditions." Her subsequent career showed how the student developed into an investigator, into the principal authority on women's occupations, and into a reformer.

Clara Collet was educated at the North London Collegiate School, soon after leaving which she became an assistant mistress at Wyggeston Girls' School, Leicester, and held that post from 1878 to 1885. In 1883 she began to study Political Economy for the London M.A. in Philosophy. It is not clear what aroused her interest in the subject. She was reading Adam Smith, J. S. Mill and Ruskin, and heard a lecture on "Art and Socialism" given by William Morris in Leicester in January 1884. It was in this period that the ferment of socialism was stirring in England; when I myself was at Cambridge, 1888–92, the Ruskin *v.* Mill (one-sided) controversy, Henry George's *Progress and Poverty*, William Morris's *News from Nowhere*, Bellamy's *Looking Backward* and Llewellyn Smith's *Story of the Dockers Strike of 1889* were the subjects of much undergraduate discussion.

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[1] One only since the deaths of Dr. J. N. Keynes and Dr. L. L. Price.

Returning to London Miss Collet attended Professor Foxwell's lectures among others at University College, and took her M.A. degree in 1885—the first woman graduate in political economy she would say. Evidently she became acquainted with the group of men and women actively interested in social problems at that time. In 1890 she was instrumental in founding the Economics Club, which for many years held monthly meetings at University College; here economists and Civil Servants (Foxwell, Edgeworth, Marshall, Higgs, Hawtrey and others) read papers, which were followed by stimulating discussion, and often expanded and published. The Club now meets at the London School of Economics.

Meanwhile, as early as 1886, Miss Collet began to take part in Charles Booth's survey of *Life and Labour of the People in London*, and was thus associated with the notable team of investigators that included Beatrice Potter, Llewellyn Smith and other well-known names. She wrote on women's occupations with the accuracy, lucidity and economic background that distinguished all her work. Her subject had special importance at a time when much attention was given to the "sweated industries," and the sequel at a later date was the establishment of Trade Boards and minimum wages in industries where wages were exceptionally low, with which she was concerned as an official of the Board of Trade.

In 1893 the Labour Department of the Board of Trade was established with Llewellyn Smith as Labour Commissioner and Miss Collet as Chief Investigator for Women's Industries. Till her retirement from the Ministry of Labour in 1920 her work was mainly anonymous, though at least two reports appeared over her signature and she contributed some articles to the ECONOMIC JOURNAL and to the *Royal Statistical Journal*. But she was a member of the Councils of the Royal Statistical Society (1919–35) and of the Royal Economic Society (1920–41) and of various committees of enquiry. Throughout her active life it was to her that one naturally turned for help, if one was concerned with any problem of women's work or wages. After her retirement she contributed to the *New Survey of London Life and Labour* a chapter on Domestic Service, 1930, still working with Sir H. Llewellyn Smith.

Miss Collet's interests were by no means confined to economics and statistics: for these reference may be made to her articles, partly autobiographical, entitled *Charles Booth, the Denison Club and H. Llewellyn Smith* (*Royal Statistical Journal*, 1945, p. 482) and *Henry Higgs* (ECONOMIC JOURNAL, 1940, p. 546) and to the obituary notice in the *Royal Statistical Journal*, 1948, p. 252. In 1936 she retired to Sidmouth with her brothers, and interested herself among other things in the history of her family; editing the tales of Joseph Collet, *circa* 1917, and John Collet; the last-named appeared in 1948 as *The Letters of John to Eliza, a Four Years' Correspondence Course in the Education of Women, 1806–1810.*

A. L. BOWLEY.

CURRENT TOPICS

By the death of Dr. L. L. Price on February 26, 1950, the Society has lost one of its few remaining links with its earliest years. His name appears as Honorary Secretary in the list of the first Council, printed on page 1 of the first issue of the ECONOMIC JOURNAL. He remained one of the Honorary Secretaries continuously until his death. We hope to print an obituary notice in a forthcoming issue.

We record with great regret the death of Professor P. Barrett Whale, Brunner Professor of Economics in the University of Liverpool and a valued member of the Council of the Royal Economic Society. We hope to print an obituary notice in a forthcoming issue.

The death is reported of Dr. J. A. Bowie, lately Principal of the School of Economics, Dundee, and well known as a writer and teacher on problems of industrial administration.

Sir James Hight, for very many years correspondent of the Society in New Zealand, has, to our regret, resigned from that position after his retirement from active teaching work in Canterbury University College, Christchurch.

Professor F. A. Hayek, who has been appointed to a Chair at Chicago, has, to our great regret, resigned from the Council of the Society as well as from the Tooke Professorship of Economic Science and Statistics, which he held at the London School of Economics.

Professor L. Robbins, Honorary Secretary, writes as follows: The Society will wish to offer its warmest congratulations to its Secretary, Mr. Austin Robinson, who has recently been elected to a newly established Professorship of Economics in the University of Cambridge. This Chair is additional to the Chair of Political Economy held by Professor D. H. Robertson, President of the Society.

The Council of the Royal Statistical Society offer the Frances Wood Memorial Prize, value £30, for competition in 1950. The Prize is offered for the best investigation, on statistical lines, of any problem bearing directly or indirectly upon the economic or social conditions of the people. Competitors, who must be under the age of thirty years on January 1, 1950, but need not be Fellows of the Society, will choose their own subjects, but it is believed that original observation or analysis made in the course of the writer's ordinary work or special research will afford useful material for papers. Essays must be sent to the Honorary Secretaries of the Royal Statistical Society, 4 Portugal Street, W.C. 2, not later than December 30, 1950, from whom possible candidates should obtain fuller information regarding the conditions of entry.

THE following have compounded for life membership of the Royal Economic Society:—

Clark, Colin.
Cosmas, A. P.
Dorfman, Prof. J.
Goodwin, R. M.
Graaff, J. de V.
Holt, D.
Laing, J.
Leser, C. E. V.
McCollin, E. S. J.
Mollett, A. L.
Pesmazogulu, Dr. J. S.
Sturch, N. L.
Wymer, E. A.
Yu, K. H.

The following have been admitted to membership of the Society :—

Adams, P. F.
Aggarwala, K. C.
Appleton, S. D.
Ares, R. D.
Arumugam, P. S.
Asher, J. C.
Aurora, J. R.
Ayyar, K. L. V.
Bailey, J. A.
Balani, M. T.
Balderston, W. S.
Bardgett, W. E.
Barnes, L. W. C. S.
Barros, J. M. M.
Bartholin, P.
Bath, A. A.
Beckett, D. W.
Beckwith, B. P.
Benson, E. W.
Berndt, R.
Bhat, K. S. H.
Bhutta, P. H.
Binhammer, H.
Black, B. G.
Black, C.
Bloch, S.
Boddy, Prof. F. M.
Boote, R. E.
Brooks, R. H.
Burgin, S. F.
Bury, G. T.
Butterworth, N.
Cabell, M. E.
Chakraverty, D. N.
Chartrey, W. L. D.
Chee, C. K.
Cheenoff, B.
Chellew, P. P.
Chomchai, P.
Chye, S. G.
Clark, L. J.
Clarke, T.
Clifton, P.
Cole, A. V.
Copeman, G. H.
Cottrell, H. C.
Cowan, E. A.
Crapper, C.
Crawford, J. C.
Crawley, D.
Dakin, E. F.
Dalal, S P.
Dale, D. A.
Dales, J. H.
Dam, N.
Dempster, W.
De Meo, Prof. G.
Desai, T. G.
De Silva, M. M. E.
Douglas, E. G.
Duhaut, H. R.
Ekserdjian, N. M.
Elsdon, F.
Fallows, D. R.
Feld, Dr. H. N.
Finch, C. C.
Fisher, M. R.
Foley, M. D.
Forrest, Mrs. C. V.
Fourie, A.
Franklin, D.
Gander, R. S.
Georgiades, L. P.
Ghosh, D.
Ghosh, K. P.
Goldstrom, F.
Gordon, W. C.
Gowland, S. J.
Griffiths, M. J.
Grimley, P.
Gunaratne, H. D.
Gupta, D.
Hall, J.
Hall, M.
Hall-Johnson, A. S.
Hamilton, J. H.
Hankinson, E.
Hanley, J.
Harris, Alan.
Harris, R.
Hashmi, A. A.
Hill, H.
Hirsch, W. Z.
Hirst, S.
Hollies, R. J.
Holmes, E. C.
Hopkin, W. A. B.
Hourston, C. H.
Howard, R. S.
Hunt, J. L. A.
Husain, R. A.
Hussain, Q. S. A.
Hutchinson, W. B.
Jacques, M. H. S.
Jaitly, P. L.
Jaques, D.
Jaswa, S. K.
Jefferson, W. L.
John, M. I.
Johns, A.
Johnston, J.
Jones, J. D.
Jones, J. G.
Kaluaratchi, A. W.
Kamaraju, V.
Kapuwatte, H. B.
Khoo, K. E.
Khosla, L. R.
Kirton, R. J.
Kitto, R. F.

Kohli, A. C.
Kruisinga, H.
Kulkarni, Prof. K. R.
Lagan, D. F.
Lajda, M.
Lanner, J. L.
Lecht, Prof. L. A.
Leong, G. K.
Levy, D. J.
Lewis, D.
Love, T. C.
Lyne, L. S.
McClughan, H. E. L.
McDonald, E. H.
MacIntosh, R. M.
McKenzie, Prof. L. W.
Mackintosh, W. H.
McLarney, J. P.
Mahendroo, V. N.
Maldahiar K. K.
Manolescue, J. W.
Markiewicz, W. L. T.
Marron, F. J.
Marsh, S. H.
Marten, Prof. A.
Mathur, B. C.
Mathur, S. B. L.
Matthews, R. L.
Mehta, B. H.
Mehta, R. C.
Menzies, J. G.
Merchant, H. F.
Milligan, J. G. C.
Milton, A. H.
Mitchell, B. E.
Morrisey, F.
Musvy, S. M. M.
Naik, V. P.
Nayar, V. G. K.
Niyogi, S. P.
Oliver, H.
Oliver, R. W.
Osborne, F. R.
Oyebola, S. O.
Pantal, S. S.
Parkes, B.
Parlane, W. F.
Phelps, Prof. C. W.
Philippides, C. M.
Phillips, G. D.
Pinedo, F.
Polyzoides. A. T.
Potts, P. G.
Powicke, J. C.
Pratt, F. R.
Proctor, N.
Rahman Gani, H. H.
Raj, S. A.
Randhava, B. S.
Rawlins, D. F.
Rawlinson, F.
Rawlinson, G.
Reynolds, R. N.
Richardson, N.
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Roberts, W. D.
Robertson, D. J.
Robson, P.
Robson, R.
Rodrigo, N. L.
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Rose, R. J.
Rosemall, C. A.
Rosen, A. D.
Rowbotham, T. W.
Rozental, A. A.
Ruggles, Miss N. D.
Saboya, J. S.
Salam, S. A.
Schloss, Prof. H. H.
Schuller, G. J.
Schwarz, R. P.
Schwier, Mrs. J. F.
Scott, M. F. G.
Senior, G.
Severtson, D.
Shah, F. A.
Shah, N. H.
Shah, S. M. H.
Shankara, S.
Sharma, J.
Sherwood, P. W.
Sieff, J. A.
Silber, Dr. L. I.
Sleightholm, M. T.
Smerizschalski, Dr. S.
Sofidiya, J. K.
Sommers, H. M.
Stevenson, J.
Stimson, D. R.
Stubbs, J. B.
Sweezy, P. M.
Swianiewicz, Prof. S.
Syrimis, G.
Talbot, A. J.
Thomas, E. T. M.
Tonkinson, E.
Tweddell, J. F.
Van Loo, G. H.
Varma, M.
Walsh, W.
Ward, A. C.
Waterston, A.
Weber, C. J.
Wharton, J. K.
Wharton, L.
Whatmough, G.
Wilde, L. C. H.
Winter, R. J.
Wirstrom, L.
Wood, Miss M. J.
Woodard, M. H.
Woolley, W.
Yates, N. R.
Yong, T. H.

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American College, Mathurai.
Banco de Bilbao.
Central Mortgage and Housing Corporation, Ottawa.
Ciencias e Letras, Sao Paulo.
Csl Ustav Prace, Bratislava.
Department of Defence Library, Melbourne.
Duquesne University, Pittsburgh.
Economic Graduate Students' Library, Berkeley.
Economic League, Leeds.
Institute for Advanced Study, Princeton.
Instituto Nacional de Industria, Madrid.
J.R.C. Club; University of Wisconsin.
Keble College, Oxford.
Lane Library, Wisconsin.
Libreria Commissionaria Sansoni, Firenze.
Lloyds Bank, Ltd.
Loras College Library, Dubuque.
Loyola University, New Orleans.
Marshall Library, Seton Hall College.
Mexican Embassy, London.
National City Bank of New York.
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Petroleum Press Bureau.
Queen's University, Belfast.
Rand Corporation, Santa Monica.
St. Lawrence University, New York.
Studieforbundet Naringsliv Och Samballe, Stockholm.
University Bookshop, Brisbane.
University College, Dublin.
University of Queensland Press.
Ward Library, Peterhouse, Cambridge.
Wilkes College Library.

RECENT PERIODICALS AND NEW BOOKS.

Journal of the Royal Statistical Society.

VOL. CXII, PART III, 1949. *Foundations of Probability and Statistical Inference :* G. TINTNER. *Some Uses of Statistics in the Building Industry :* J. BRONOWSKI AND OTHERS. *A Note on Carnap's Theory of Probability :* S. F. JAMES. *Industrial Classification—National and International :* R. E. BEALES. *Statistics relating to the Coal Mining Industry :* R. F. GEORGE.

Oxford Economic Papers.

VOL. 2, NO. 1, JANUARY 1950. *Evaluation of Real National Income :* P. A. SAMUELSON. *Measurement of Efficiency :* L. C. HAWKINS. *Prices and Costs in Nationalized Undertakings :* C. A. R. CROSLAND. *Note on the Price Policy Indicated by the Nationalization Acts :* D. N. CHESTER. *The Commercial Crisis of 1847 :* C. N. WARD-PERKINS. *Buffer Stocks and Economic Stability :* R. S. PORTER. *A Note on the Theory of Consumers' Behaviour :* W. E. ARMSTRONG. *The Common Sense of Indifference Curves :* C. KENNEDY. *The Theory of Consumer's Behaviour ; a comment :* I. M. D. LITTLE.

The Political Quarterly.

VOL. XXI, NO. 1, JANUARY–MARCH 1950. *The Malthusian Devil in Chains :* MARY STOCKS. *Thought for Food :* H. M. SINCLAIR. *American Policy and Japanese Politics :* H. S. QUIGLEY. *Deviations from Marxism :* J. PLAMENATZ. *The Strasbourg Illusion :* W. PICKLES. *Government Reform in the U.S.A. :* H. ZINK. *The Organisation* of *Political Parties :* D. CLARKE.

The Manchester School of Economic and Social Studies.

VOL. XVIII, NO. 1, JANUARY 1950. *The Productivity of British Agriculture :* L. P. F. SMITH. *Productivity in the Cotton Spinning Industry :* D. C. SHAW. *Municipal Gas Costs and Revenue :* J. F. SLEEMAN. The *Government of Haslingden :* IRENE W. SCARF. *The Habit of Voting :* A. H. BIRCH. *Non-Voting in an Urban District :* J. GRUNDY.

International Affairs.

VOL. XXVI, NO. 1, JANUARY 1950. *The Holy Places of Palestine in History and in Politics :* SIR WILLIAM FITZGERALD. *The Bigwin Conference :* R. A. BUTLER. *China : report of a visit :* M. LINDSAY. *Education in the British Zone of Germany :* R. BIRLEY. *Food and Farming in Germany. I. Food and Nutrition :* W. KLATT. *Education in Turkey :* T. VERSCHOYLE. *Tibet and her Neighbours :* SIR BASIL GOULD. *British Nationality and Irish Citizenship :* R. F. V. HEUSTON.

Population Studies.

VOL. III, NO. 3, DECEMBER 1949. *The Report of the Royal Commission on Population :* F. W. NOTESTEIN. *Income Tax and Family Allowances in Britain :* H. S. BOOKER. *The Encouragement of Emigration by British Trade Unions, 1850–1900 :* CHARLOTTE ERICKSON. *Provisional Results of the Sample Survey of the African Population of Southern Rhodesia, 1948 :* J. R. H. SHAUL and C. A. L. MYBURGH. *The Length of Working Life :* S. L. WOLFBEIN. *The Intelligence of Twins. A Comparative Study of Eleven-year-old Twins :* S. N. MEHROTRA and J. MAXWELL. *The East African Population Census, 1948. Planning and Enumeration :* C. J. MARTIN.

VOL. III, NO. 4, MARCH 1950. *The Trend of Intelligence in Certain Districts of England :* W. G. EMMETT. *Gregory King's Estimate of the Population of England and Wales, 1695 :* D. V. GLASS. *Supplementary Child Health Services. Part III. Infant Welfare Centres :* GRISELDA ROWNTREE. *The Population Geography of the Free Negro in Ante-Bellum America :* W. ZELINSKY. *Notes on Abortion and Birth Control in Germany :* H. HARMSEN. *Forecasts of Population in the United States :* H. S. SHRYCOCK.

SUPPLEMENT. *Cultural Assimilation of Immigrants.* Papers presented under the auspices and published with the assistance of UNESCO on behalf of the Population Investigation Committee. Papers by H. BUNLE, G. MAUCO, J. ISAAC, G. MORTARA, R. BACHI, F. SAVORGNAN, M. LACROIX and EDITH ADAMS.

The Sociological Review.

VOL. XLII, SECTION 1, 1950. *Philosophy, Psychology and Sociology in the Training of Teachers :* W. A. CAMPBELL STEWART.

VOL. XLII, SECTION 2, 1950. *Personality and Language in Society :* J. R. FIRTH.

The Eugenics Review.

VOL. 41, NO. 4, JANUARY 1950. *Intelligence and Fertility :* SIR GODFREY THOMSON. *Family Service Units for Problem Families :* D. JONES.

VOL. 42, NO. 1, APRIL. *The Primrose Path :* A. S. PARKES. *Fitness and Survival :* C. A. B. SMITH *A Satisfactory Population for Britain ? :* SIR CHARLES ARDEN-CLOSE. *War and Eugenics :* L. F. RICHARDSON.

Soviet Studies.

VOL. I, NO. 3, JANUARY 1950. *The Soviet Union and International Law :* J. N. HAZARD.

Bulletin of the Oxford University Institute of Statistics.

VOL. 11, NO. 12, DECEMBER 1949. *Quarterly Estimates of the National Income :* D. SEERS. *A 'Human Needs' Diet in November, 1949 :* T. SCHULZ. *Trends in Cocoa Production :* P. ADY.

VOL. 12, NOS. 1 and 2, JANUARY and FEBRUARY 1950. *The Distribution of Capital among the Medical Profession in England and Wales, 1940–1 :* L. HAMILTON. *1949 : Forecast and Fact :* P. D. HENDERSON and D. SEERS. *U.S. Import Propensities since the War :* J. A. HARGREAVES.

Accounting Research.

VOL. 1, NO. 3, JANUARY 1950. *Scientific Method in Auditing :* L. L. VANCE. *Consolidated Accounts and their Similarity to Partnership Accounts :* B. J. S. WIMBLE. *Accounting and Taxation in Sweden in Relation to the Problem of Inflationary Profits :* PER V. A. HANNER. *The Exchequer Accounts :* H. NORRIS. *Notes on Accounting History :* MARY E. MURPHY. *The Effects of the Local Government Act, 1948, and other Recent Legislation on the Finances of Local Authorities. Undistributed Profits as a Source of Company Finance :* R. W. MOON.

The Banker.

JANUARY 1950. *Will the American Boom Continue ? After the Australasian Elections. Prospect for Germany's Creditors.*

FEBRUARY 1950. *An Economic Approach to the Election. American Aid and Britain's Burdens :* GRAHAM HUTTON. *Payments Union for Europe.*

MARCH 1950. *After the Election. Unbridgeable Dollar Gap ? End of Reparations ? :* M. J. BONN. *Agreement with South Africa. Irish Economic Survey :* G. A. DUNCAN.

APRIL 1950. *Prelude to the Budget. European Payments and Germany. "Eximbank" and Point IV Aid.*

The Bankers' Magazine.

JANUARY 1950. *Money and Banking in the Twentieth Century:* J. E. WADSWORTH.

FEBRUARY 1950. *Money and Banking in the Twentieth Century:* W. RIDLEY. *Dr. Schacht Explains:* M. J. BONN.

MARCH 1950. *After the Polls. Lord Norman: an appreciation:* SIR HENRY CLAY. *Money and Banking in the Twentieth Century:* G. O. PAPWORTH. *Banking in the Irish Economy in 1949.*

APRIL 1950. *The Rebuff to Socialism. Money and Banking in the Twentieth Century.*

Barclays Bank Review.

FEBRUARY 1950. *Income and Savings.*

District Bank Review.

MARCH 1950. *Cotton Industry Prices and Profits:* SIR RALPH W. LACEY. *The End of the Post-war Boom:* R. H. FRY. *Unto Cæsar.*

Lloyds Bank Review.

JANUARY 1950. *The Problem of Retrenchment:* Sir HUBERT HENDERSON. *Public Bodies and Public Accountability:* R. BIRD. *Return to Credit Control in France:* P. BAREAU.

Midland Bank Review.

FEBRUARY 1950. *The Size and Shape of the National Debt.*

National Provincial Bank.

FEBRUARY 1950. *Keynes:* LORD CATTO. *Strategy for Coal Exports:* H. H. MERRETT. *A Review of Trade and Industry:* H. G. HODDER.

The Three Banks Review.

DECEMBER 1949. *Devaluation and World Trade:* J. R. HICKS. *The Taxation of Industry:* F. W. FORGE. *The "Ireland" Forgeries.*

Westminster Bank Review.

NOVEMBER 1949. *Wage Levels after two Wars:* E. H. PHELPS BROWN. *Economy and Confidence. Thirty-five Years of Rent Control. Government Finance and Bank Deposits. The Farm Dairy Industry.*

FEBRUARY 1950. *How Much Disinflation?:* R. C. TRESS. *The Chairman's Statement. Progress towards Western Union. Independence by 1952. Achievements and Prospects in Apple-Growing.*

Planning.

VOL. XVI, NO. 308, 1950. *Economics of the Council House.*

VOL. XVI, NO. 309, 1950. *The Hospital Service, II: The Patient is Human.*

VOL. XVI, NO. 310, 1950. *University Students. A Pilot Survey.*

VOL. XVI, NO. 311, 1950. *Economic Policy. A Discussion of Planning Techniques.*

Town & Country Planning.

VOL. XVIII, NO. 70, FEBRUARY 1950. *New Deal for Housewives:* LORD BEVERIDGE. *The Aims of Planning:* F. J. OSBORN.

VOL. XVIII, NO. 71, MARCH 1950. *Drift to Belfast:* G. BUCHANAN. *London Regional Problem:* W. G. HOLFORD. *Outline Plan for the Portsmouth District:* P. W. MACFARLANE. *The Romance of the Land Registry:* JOY SPOCZYNSKA. *Survey of Oakridge:* CECILY HORNBY. *The Planning of Cambridge:* A. E. RICHARDSON. *Spires:* J. D. U. WARD. *Hatfield New Town:* G. N. C. SWIFT. *Further Reflections on the Black Country:* P. SARGENT FLORENCE.

The Canadian Journal of Economics and Political Science.

VOL. 16, NO. 1, FEBRUARY 1950. *Unionism in the Fishing Industry of British Columbia:* S. JAMIESON and P. GLADSTONE. *Some Longer-*

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VOL. V, NO. 3. *Der europäische Bundespakt. Die britische Europapolitik, Part I. Die Strassburger Vorschläge zur Sicherung der Menschenrechte. Empfehlung der Konsultativ-versammlung des Europarates in Strassburg an den Ministerausschuff über Menschenrechte und Grundfreiheiten. Fur einen europäischen Bundespakt. Die wirtschaftliche Lage Spaniens nach dem Zweiten Weltkrieg.*

Vol. V, NO. 4. *Die Kunstgeschichte auf neuen Wegen. Die britische Europapolitik, Part 2. Der Ausbau des Genfer Abkommens über Zölle und Handel.*

Zeitschrift für Nationalökonomie.

VOL. XII, NO. 1, 1948. *Zur Rehabilitierung des Wieserschen Grenzgesetzes :* L. ILLY. *Die Zusammenhänge zwischen Grosse, Kosten und Rentabilitat industrieller Betriebe :* K. GRUBER. *Die Wiederherstellung einer internationalen Wahrungsordnung :* F. VITO. *Ökonomische Zurechnung und praktische Wirtschaftsrechnung :* R. KERSCHAGL. *Wesen, Bedeutung und gesetzliche Grundlagen der Einheitlichkeit in der Besteuerung :* R. PFAUNDLER.

VOL. XII, NOS. 2–4, 1949. *Die Bedeutung der osterreichischen Schule der Nationalokonomie fur die moderne Wirtschaftswissenschaft :* H. BAYER. *Analytical Notes on Economic Systems :* T. SURÁNYI-UNGER. *Les macrodécisions et la théorie des choix :* F. PERROUX. *Die Neutralität der Wirtschaftswissenschaft und der Begriff der Wohlfahrtsökonomie :* F. VITO. *Zur Methodenlehre C. Mengers und der osterreichischen Schule :* J. DOBRETSBERGER. *De la classification en histoire des doctrines économiques :* J. DUBERGÉ. *Die grosse Wende der Volkswirtschaftslehre :* J. A. NEUBAUER. *Über die dynamische Theorie und eine besondere Anwendung auf die Theorie des Nutzens :* E. FOSSATI. *Essai de révision de la Théorie des prix à la lumière des progrès de la Psychologie moderne :* J. MARCHAL. *Grundprobleme der Preistheorie :* L. ILLY. *La position de Léon Walras et de Pareto à l'égard de l'école autrichienne :* B. NOGARO. *Das Gesetz vom Grenznutzenniveau im Lichte der Kritik :* A. MAHR. *Der angebliche Zirkelschluss der Preisbildungstheorie :* E. SCHAMS.

Monatsberichte des Österreichischen Institutes fur Wirtschaftsforschung.

VOL. XXIII, NO. 3, MARCH 1950. *Vroübergehende Konjunkturabschwächung. Die wirtschaftliche lage in Österreich. Die Insolvenzen in Österreich seit Kriegsende.*

De Economist.

NOVEMBER 1949. *Structural Limits in Economic Development :* JOHAN ÅKERMAN. (In English.) The article stresses the importance of business cycle research : the study of time lags is the corner-stone of every serious attempt to explain the course and phases of cyclical change. Connections thus arrived at are not perpetually valid. The writer differentiates between cycles and structure—structure being regarded as a stable frame round the variations. There are many different frames, which fall into two main groups, institutional structures and technical structures. Using six " market-series " and eight " group-series," a detailed

February 1950. *Conjunctuurpolitiek in Zweden :* A. A. Van Rhijn and J. E. Van Dierendonck. How far the quick restoration of the Swedish economy after 1933 was a consequence of the " welfare-plan " of the new government has been a matter of discussion. Events (course of unemployment, etc.) are surveyed since 1930. The new government's aim was to raise purchasing power, by giving normal wages in the case of "public works " (replacing the older "reserve works "), and by fixing guaranteed minimum prices for agricultural products. The essence of the changed conditions attached to " public works " was to give these the "character of normal objects." In addition, it was decided not to balance the budget on a yearly basis, but on the basis of the " conjunctuur-cycle." The conclusion arrived at is that Swedish welfare is the consequence of the conscious welfare policy of the government, and not of chance external and natural factors. An account is given of the method whereby " public works " are operated, and the discussion is brought down to the post-war years. Sweden is represented as having been a pioneer in " fiscal conjunctuur-policy " in the years before the war. The article concludes with " lessons " for the Netherlands. *Mistroostigheid over mistroostigheid :* F. L. Polak. *Over mistroostigheden en misvattingen.* J. Zijlstra. Two further contributions to the discussion on " Value-judgments in Economics."

Aussenwirtschaft.

Vol. IV, No. 4, December 1949. *Der Marshall-Plan für den wirtschaftlichen Wiederaufbau Europas und die Dollarknappheit :* G. Haberler. *Grundprobleme der Weltwirtschaft :* A. Bosshardt. *Agrarpolitik und Aussenwirtschaft :* E. Geyer.

Schweizerische Zeitschrift fur Volkswirtschaft und Statistik.

Vol. 86, No. 1, February 1950. *Die Finanzgesinnung der Bundesversammlung :* E. Grossmann. *AHV-Fonds, Kapitalmarkt und Konjunktur :* T. Keller. *Volkseinkommen und Sozialprodukt der USSR. :* J. Rosen. *Lauderdales Kritik an der klassischen Ökonomie :* P. Heintz.

Société de Banque Suisse.

No. 1, 1950. *Le marché de l'argent en Suisse :* R. Speich.

Giornale degli Economisti e Annali di Economia.

July–August 1949. *Riorganizzazione dell'economia mondiale e teoria del commercio internazionale :* G. Palomba. *Le equazioni della dinamica economica nel caso più semplice del regime di monopolio della produzione delle merci :* G. Sensini. *Vecchi e nuovi problemi nello studio delle distribuzioni dei redditi :* V. Castellano. *Cenni sulla propensione all'importazione :* L. Diena. *Sul significato di alcune costanti statistiche :* M. de Vergottini. *Su un procedimento di calcolo per l'applicazione del metodo dei minimi quadrati :* V. Amato. *Problemi di politica creditizia :* C. Bresciani-Turroni.

Economia Internazionale.

Vol. II, No. 4, November 1949. *Some Theoretical Aspects of Payment by Results :* G. L. S. Shackle. *La dynamique d'un marché fermé :* L. Amoroso. *L'Évolution de l'économie et l'économie politique :* E. Varga. *Commercio internazionale e concorrenza monopolistica :* O. D'Alauro.

Critica Economica.

No. 3, 1949. *Il crollo della teoria capitalistica della " prosperità attraverso gli armamenti " :* J. Kuczynski. *Il livello di vita americano :* R. Mossé. *La via della servitù :* A. Pesenti.

No. 4, 1949. *Riforma fondiaria e proprietà coltivatrice :* A. Segni. *Sulla riforma fondiaria :* R. Grieco. *Linee per una riforma fondiaria :* I. Bosi. *Aspetti di una riforma fondiaria nella Valle Paodana :* A. de Polzer.

NOS. 5–6, 1949. *Lo squilibrio tra l'economia degli U.S.A. e quella degli altri paesi capitalistici :* B. MANZOCCHI. *Il dissesto dell'economia britannica nel quadro delle relazioni economiche europee :* F. DE CINDIO. *L'industria meccanica italiana :* F. ANTOLINI. *Gino Borgatta :* S. STEVE.

L'Industria.

NO. 4, 1949. *Scienza economica, scienza politica, azione politica :* B. LEONI. *Le conseguenze finanziarie di Keynes :* C. ARENA. *Ricerche attorno ai costi di produzione in taluni rami dell'industria :* F. BRAMBILLA. *La Banca Mondiale e lo sviluppo economico dei paesi arretrati :* V. MARRAMA.

Rivista Internazionale di Scienze Sociali.

JANUARY–FEBRUARY 1950. *Lo stato presente della scienza economica e il pensiero di G. Toniolo :* F. VITO. *La lotta per l'ordinamento economico nella Russia Sovietica :* A. WEBER. *La teoria generale del reddito e dell'occupazione :* S. B. ANDREOLI. *Le scienze nuove dell'uomo e della società :* C. PELLIZZI.

Banco di Roma (Review of the Economic Conditions in Italy).

JANUARY 1950. *The Programmes and Problems of the Electricity Industry in Italy :* P. FERRERIO.
MARCH 1950. *The First Step in the Fiscal Reform :* C. ARENA.

Italian Economic Survey (The Association of Italian Joint Stock Companies).

NOVEMBER–DECEMBER 1949. *Production Costs.*
JANUARY–FEBRUARY 1950. *Unsolved Problems.*

Banca Nazionale del Lavoro Quarterly Review.

JULY–SEPTEMBER 1949. *The Economic Future of Europe and the E.R.P. :* C. RODANÒ. *Public Expenditure, Savings and Foreign Loans in the Development of Southern Italy :* P. SARACENO. *Italian Joint Stock Companies from 1938 to 1948 :* F. COPPOLA D'ANNA. *The Construction of Wholesale Price Index Numbers and Wholesale Price Trends in Italy, May 1946–July 1949 :* M. IMPERATORI.
OCTOBER–DECEMBER 1949. *The Medici Bank :* A. SAPORI. *Causes of the Decline in the Stock Exchange in Italy :* L. FEDERICI. *Recent Banking Developments in Italy · December 1947–September 1949 :* G. PIETRANERA and C. ZACCHIA. *The Keynesians :* P. S. LABINI. *People's Dwelling Houses in Italy :* A. SCHIAVI.

Ekonomisk Tidskrift.

Register 1899–1949.

VOL. LI, NO. 4, DECEMBER 1949. *Government Paper Money : A unique Phase in Swedish Monetary History :* ELI F. HECKSCHER. An instructive account of the issue of paper money in Sweden between 1789 and 1803. The period is interesting in that for the first time in Swedish economic literature there appeared a demand for a permanent paper standard. *Atomistic and Holistic Economic Theory :* GÖRAN NYBLÉN. This article deals with fundamentals. An "holistic" theory (the word is derived from the philosophical writings of Smuts) conceives society as a "whole" which is something more than the sum of its parts: it puts special emphasis on the mutual relationships of the parts (*e.g.*, the individual producing and consuming units, the State and private firms, various social groups), the activity of these entities being conditioned by the character of the inter-relationship between them. "Atomistic" analysis concentrates on the behaviour of the individual unit and regards the economy as a whole as just an aggregation of these units. In the light of this distinction, the article proceeds to classify the major systems of economic analysis. First, we have the system of thought exemplified in Quesnay's *Tableau* and its descendant, Social Accounting. The projection of society as a "circular flow" is neither "atomistic" nor "holistic": it is to be regarded as a starting-point not as an end-product. Then we come to the "interdependence" systems, from Walras to the modern econometric models. The utility functions, production functions and behaviour equations of the Walrasian system are essentially atomistic; the equilibrium conditions represent a particular kind of institutional framework within which the activity of the planning units takes place. This latter element gives it a slight "holistic" flavour; but modern extensions of the system have not changed its fundamental quality—the relations assigned to one particular planning unit are a reality in themselves and exist independently of the functions relating to other planning units. By the same token econometric models with their "structure coefficients" remain essentially atomistic. There is something far more fundamental than the practical difficulties of conducting planned experiments which explains why economic groups cannot be studied *in isolation*. There have been reactions against "atomism" from three directions, (*a*) the philosophical, *e.g.*, A. G. Gruchy, *Modern Economic Thought, The American Contribution* (1947), (*b*) the logical, *e.g.*, von Neumann and Morgenstern, *Theory of Games and Economic Behaviour* (1947), and (*c*) the analysis of economic time series, *e.g.*, Johan Åkerman, *Ekonomisk Teori* Vols. I and II (1939 and 1944) and *Ekonomisk Kausalitet* (1936). With Quesnay's *Tableau* and Walras's *Éléments d'économie politique* (1874), the work of Von Neumann and Morgenstern will rank as a third great landmark in the history of speculation in the economic field. It seeks to classify all institutional arrangements, all relations between planning units, that are possible: the activity of the units under the given maximising hypothesis is determined by the institutional set-up in which they operate. The activity of one unit cannot be studied in isolation: it is bound up with the character of its relations with other units. The *Theory of Games* is, therefore, genuinely "holistic." Johan Åkerman bases his system on the proposition that a causal analysis of business cycles over a period of, say, a century cannot be meaningful unless one recognises that during such a period the economy passes through certain fundamental structural changes. He has made a path-breaking study of the concept of "structure" and the identification of structural landmarks; and he has reached significant results based on an analysis of time series relating to the United Kingdom, the U.S.A., France, Germany and Sweden. His concept of "structure" is quite different from the structure coefficients of the econometric models, the latter being essentially atomistic in character. Åkerman's analysis shows that for each structural phase (*i.e.*, where the structure remains approximately constant), there is a corresponding behaviour pattern for the individual entities. Samuelson has recently said, in discussing the future of economic dynamics, that "the number of conceivable models is literally infinite and a lifetime may be spent in exploring possibilities." Atomistic analysis has now become exceedingly complicated and time-consuming. One may ask whether it is worth it, considering the criticisms of the relevancy of traditional postulates made by thinkers from Veblen to von Neumann and Morgenstern. What is needed is not refinement of a technique based on atomistic assumptions but an examination of the relation between the traditional and the "holistic" approach with a critical appraisal of the different directions in which the latter is developing. *The Taxation of Married Couples*: GUNNAR LINDGREN. An exhaustive and intricate analysis of the implications of different methods of levying income tax on married couples. It is accompanied by four large folded sheets covered with a host of ingenious diagrams. For the connoisseur only.

Skandinaviska Banken Aktiebolag.

VOL. XXXI, NO. 1, JANUARY 1950. *The Future Value of Money*: G. SÖDERLUND. *Devaluation*: P. JACOBSSON. *Sweden's Merchant Fleet*: G. SIDENVALL.

Index.

DECEMBER 1949. *Post-war Development of International Freight Rates.*

MARCH 1950. *Devaluation and Economic Policy. The Economic Situation. The Proposed Scandinavian Customs Union. Sweden's Trade with Germany.*

Nationaløkonomisk Tidsskrift.

NO. 5, 1949. *The Net Reproduction Rate Critically Examined :* HALVOR GILLE. *The Theory of Games, Expectation Analysis and Trade Agreements :* K. O. FAXÉN. The attempt to construct a theory of trade-agreements brings us into contact with three types of economic problem : exchange negotiations between many parties, the analysis of behaviour with respect to such chances of profit or loss as can be handled by the probability-analysis approach, and reactions to those other possibilities of profit or loss which arise from the fact that the parties participate in a game with an undetermined solution. The first is an old problem which the theory of games can help us to see in a new way. With the last two, we have not got much further than discovering the nature of the problem, and our theoretical apparatus does not seem able to solve them. *Some Perspectives in Public Finance :* ARNE LUND. The broad trends in thought over the past fifty years have been related to the political aims of the period. We can distinguish (1) The idea that the State should satisfy some collective needs and related to it the theoretical approach that treats public activities as part of the price mechanism and the Equivalence theory of taxation. (2) The desire for redistribution of income and in connection with it the ability-to-pay principle. (3) The problem of regulating the level of activity and modern theory. These three approaches to public-finance theory cannot be reconciled completely; the present task is to consider where the different aims clash and also to analyse the effects of public finance on productivity which has now become important. *Scarcity of Goods and scarcity of Labour during an open inflation :* BENT HANSEN. An ingenious theoretical analysis of a continuous open inflation where the labour market and wages occupy as important a place as the goods market and prices. Demand for labour is an increasing function of the price–wage ratio and demand for goods a decreasing function (because of the lower propensity to consume following a shift to profits). There is an " equilibrium " price–wage ratio such that the excess demand for goods and for labour are such that the proportional rate of increase of prices and wages are equal, thus maintaining the ratio. A fall in the quantity of goods available due to increased Government purchases will initially raise the excess demand for goods without affecting that for labour so that for a time prices will rise faster than wages until a new equilibrium price–wage ratio is reached. The abolition of inflation in the goods market, say by tax increases, will not necessarily abolish it in the labour market, for the price–wage ratio may be such that each individual firm is prepared to pay higher wages to obtain more labour. *Anti-Trust in the U.S.A. :* HANS BREMS. A survey of Court decisions in the last decade. *Some Remarks on a firm's pricing policy with respect to a spatial market :* SVEND FREDENS. A theoretical analysis of the maximum profit position of a firm selling to a number of sub-markets between which arbitrage is possible (*a*) with the different prices in different markets independent of one-another (within the limits set by the possibility of arbitrage), and (*b*) with zone or base-point pricing. It is shown that (*b*) will be less or at the most equally profitable. The author maintains that it is wrong to call (*b*) a special case of (*a*) (*i.e.*, of free price-discrimination), since his formula for the most profitable price under (*b*) contains that for (*a*) as a special case. No common-sense explanation of this proposition is attempted. *The formation of the rate of interest on the bonds of Credit Associations :* HEINRICH LARSEN. Keynesian interest theory is too simple. It must be developed by distinguishing various kinds of assets on the supply side and different holders of assets on the demand side (*e.g.*, banks, insurance, companies, firms, etc.). Thus in order to be applied to particular countries and in order to explain the structure of interest rates, interest theory must be institutional. The author illustrates this theme in his analysis of the rates of interest on Credit Association bonds of different maturities. He shows that there is no "level of interest rates" because the prices of the different bonds do not always move in the same direction, and that interest-rate differentials cannot (in Denmark) be explained only by expectations of future rates.

No. 6, 1949. *Cartels and Competition :* Hans Brems. The author first defines cartels (in such a way as to exclude combines and interlocking directorates) and competition (as the attempt to increase one's share of the market). In the latter connection he criticises Triffin's definition because it refers to the behaviour of buyers and not to that of the sellers. He then attacks the view that even in the absence of cartels there could not be competition in industries with large fixed costs, showing that a price below average variable costs will result only in a special case. For five types of cartel agreement he then examines the possibilities for some form of competition to exist and the incentives to technological improvement. He distinguishes between existing cartels and negotiations for the formation of a cartel; in the former case the incentives are low, while in the latter case technological superiority gives a firm bargaining power, but this does not necessarily mean that the new products and processes will actually be used if an agreement is concluded. Throughout, the argument is illustrated by actual examples. *The Division of National Income between Social Groups :* Einar Cohn. The author brings together statistics of income distribution in Denmark at various years in the past three-quarters of a century, and comments upon them. The share of wages has been fairly constant. *The General Agreement on Tariffs and Trade :* Paul Gersmann.

Statistical Bulletin of Israel.

Vol. I, No. 3, September–October 1949.

Moneda y Crédito.

June 1949. *La heulla económica de las capitales hispanomusulmanas :* R. Carande. *Nacionalización de la industria en Gran Bretaña :* A. G. Orbaneja. *Thorstein Veblen :* F. Estapé.

September 1949. *La hacienda de Castilla bajo Carlos V :* G. Coniglio. *La economía de la España cristiana en los siglos IX y X :* L. G. de Valdeavellano. *Dos puntos de vista acerca de la Teoría del Dinero :* J. Sardá.

El Trimestre Económico.

July–September 1949. *El desarrollo económico de la América Latina y algunos de sus principales problemas :* R. Prebisch. *Ensayo sobre la economía de la caña de azúcar en Cuba :* J. Alienes y Urosa.

October–December 1949. *Un método de cálculo del desarrollo económico aplicado al Brasil :* V. L. Marrama. *La industrialización de América Latina :* M. Kybal. *Un índice del bienestar público :* R. Fernandez y Fernandez. *Alfred Marshall y nuestro tiempo :* A. Lagunilla Inárritu. *Las patentes en México de 1867 a 1876 :* C. H. Gardiner.

Revista de Economia.

December 1949. *Sondagens no domínio do rendimento nacional :* S. de Abreu.

Revista Brasileira de Economia.

Vol. III, No. 3, September 1949. *Estabilizaçõ dos preços :* E. Gudin. *Relacões de troca post-guerra entre países sub-desenvolvidos e países industrializados. O desenvolvimento econômico da América Latina e seus principais problemas :* R. Prebisch.

Obzor Národohospodářský (*Czech text*).

No. 1, September 1949. *An Attempted New Revolution in Economics :* J. Nebesář. (This is a critical examination of some of the views of the post-Keynesian school.) *Social Accounting on a Regional Basis and the Productivity of Labour* : J. Okrouhlý. *The comparability of foreign trade statistics* : Z. Fafl.

No. 2, October 1949. *The Marshallisation of Western Europe Continues* : Z. Blažej. *Credit as an Instrument of Planned Economic Control* : M. Koudelka. *The New Czechoslovak Arrangements Regarding the Purchase and Distribution of Agricultural Products* : V. Veselý.

No. 3, November 1949. *The Creation of Credit Currency* : J. Daněček. *The Social Elements in Economic Planning* : J. Šíma. *Convertibility or Transferability ?* : M. H.

No. 4, December 1949. *The Productivity of Labour in Agriculture* : J. Pražák. *The Holiday Industry in Czechoslovakia in 1947 and in Slovakia in 1948* : B. V. Černý. *National Enterprises in the German Democratic Republic and their Financing* : D. Beneš.

No. 5, January 1950. *How to Achieve the Fulfilment of the Economic Plan* : J. Berák. *Communal Enterprises* : D. Palečková. *Trade Unionists and Productivity* : E. S. *Indices as a Tool for Planning* : S. Režný.

Each issue contains also short notes on current international and domestic problems of economic and political interest.

Revue de la Faculté des Sciences Économiques de L'Université D'Istanbul.

July 1948. *Die Neuordnung des Zentralbankwesens in Deutschland* : Irmler. *La Notion Fiscale de Bénéfice et la Théorie Économique du Profit* : R. la Garrigue.

Statisztikai Szemle (Hungarian text).

October–November 1949. *Lenin and Soviet Statistics* : I. Pissarev. *Agricultural Aspects of the 1949 census of Population and the Data from Békés county. The Organisation of the Census and of Statistical Surveys. Statistical Requirements of the Socialist Planning of Transport* : L. Kubinyi. *Reflections on the Study "Some problems in the theory of the study of productivity." Recent Progress in the Soviet Economy* : J. Gurevich. *Alexis Fényes* : A. Vert. *A Glossary of Statistical Terminology.*

Gazdaság (Hungarian text).

Vol. IV, No. 22, November 1949. *A Criticism of our System of Education in Accountancy* : T. Varró. *Reserves for the Increase of Labour Productivity* : G. Prugyenszki. *The Basic Theory of Socialist Accounting* : I. Fogaras. *The Guaranteeing of Credit* : M. Riesz. *The Standard of Engagement and other Changes Affecting the Formation of Total Costs* : A. Radó.

Vol. IV, No. 23, December 1949. *Planned Cost Prices* : Z. Román. *Soviet Commerce* : P. Székely. *The Leading Aspects of Productivity in State Forestry* : S. Erdos. *The Standard of Engagement and other Changes Affecting the Formation of Total Costs* : A. Radó (continued).

Voprosy Ekonomiki (Russian text).

No. 10, 1949. *The Lenin Programme for the Socialist Transformation of Russia (Economic Platform of the Bolsheviks on the Eve of the October Revolution)* : I. Gladkov. *"Personal Economic Accounting"—a New Form of Socialist Emulation and Cost Accounting* : S. Tatur. *Reorganisation of Agriculture in Countries of Popular Democracy* : N. Pukhlov. *Increased Currency Chaos and Inflation in the Capitalist World* : A. Alekseev. *Post-war Restoration of Ukrainian Machine Construction* : A. Omarovski. *The Imperialist Struggle for the Antarctic* : S. Mikhailov.

No. 11, 1949. *Malenkov's Report on the 31st Anniversary of the Revolution. A Giant of Soviet Industry (25th Anniversary of the Moscow "Stalin" Automobile Factory)* : B. Benidze. *The Past 150 Years of the "Tryokhgornaia Manufaktura"* : R. Mikhailov. *The Historic Victory of the Chinese People* : V. Maslennikov. *The Formation of the German*

People's Republic—a Turning Point in the History of Europe: G. Grigoriev. *The Socialist Reorganisation of Agriculture in Bulgaria and the Class Struggle in the Bulgarian Village:* V. Tikhomirov. *The Working Class of Latin America in the Struggle for Independence and Democracy:* M. Danilievich. *On Methods of Determining the Economic Efficacy of Adopting Machines in the Soviet Economy:* A. Yemelianov. *The Economic Achievements of Democratic Hungary:* L. Markov and Iu. Sizov.

No. 12, 1949. *Stalin, the Great Theoretician of Socialist Economy:* K. Ostrovitianov. *Stalin on the Ways of Building Communism in the U.S.S.R.:* A. Liapin. *Stalin, the Great Leader and Teacher of the World's Proletariat:* S. Ivanov. *Stalin, the Theoretician and Organizer of Collective Farming in the U.S.S.R.:* A. Karavaev. *Stalin, the Inspirer and Organizer of the Creation of a Second Coal and Metallurgy Base in the U.S.S.R.:* V. Mikhailova. *The Triumph of the Lenin–Stalin Nationality Policy (on the 20th Anniversary of the Formation of the Tajik S.S.R.):* I. Narzikulov. *The Lenin–Stalin Teaching on Nations and the National-Colonial Revolution:* V. Vasilieva.

Planovoye Khoziaistvo (Russian text).

No. 5, 1949. *New Victories of the Soviet People in the Struggle for Fulfilment of the Post-war Stalin Five Year Plan Ahead of Time. The 10th and 11th Volumes of the Collected Works of Comrade Stalin:* A. Kovalievski. *Specialisation and Co-operation in Machine Construction:* I. Maksimov. *Organisation and Payment of Labour in Kolkhozy:* G. Gaponenko. *The Collective Agreement—a weapon for the fulfilment of the State Plans:* I. Baranov. *Devaluation of Currencies in the Capitalist Countries:* M. Poliakov and V. Trubenkov.

No. 6, 1949. *The Great Leader and Teacher of the Toiling People of the Whole World. Stalin and the Socialist Planning of the National Economy:* G. Pierov. *The Science of the Stalin Epoch:* S. Vavilov. *The Great Creative Strength of Socialist Labour:* I. Kuzminov. *Twenty-fifth Anniversary of J. V. Stalin's speech "on the problems of Agrarian policy in the U.S.S.R.":* E. Sollertinskaia. *Comrade Stalin's development of Lenin's theory of Imperialism:* A. Leontiev.

Gospodarka Planowa (Polish text).

November 1949. *The Soviet Union a Model Country for a Democratic Poland. The Role of the Party of Lenin–Stalin in Organising Socialist Competition:* L. Byczkow. *Some Problems of the Financial Plan in Connection with our Foreign Trade:* S. Polaczek. *Against Faulty Conceptions in Finance:* B. Minc. *Principles of the Rationalisation Movement:* M. Lesz. *The Six-year Plan for Electricity:* P. Nowacki. *The Albanian Five-year Plan:* M. Jarecz.

December 1949. *Problems of Planning in Stalin's Works during 1917–33. The Fulfilment of the three-year Plan before Schedule:* J. Marzec. *The 1950 Foreign Trade Plan:* J. Krynicki. *Barter Transactions in the Planned Economy:* S. Szatowski. *The Mineral Industry in the Six-year Plan:* S. Lewin. *Soviet Experience in Co-operation between Science and Industry:* J. Artiemienko. *Planned Agriculture in the People's Democracies:* J. Kosemin.

Wiadomości Narodowego Banku Polskiego (Polish text).

No. 10, October 1949. *Planned Accountancy—the Means to Improve Planned Finance:* Z. Witkowski. *A Project to Standardise Current Accounts in all Banks:* K. Niemski. *Principles of Financing Investment in 1950:* R. Secomski. *The Soviet Plan for Cash Accounts:* S. Żurawicki.

Nos. 11–12, November–December 1949. *A Plan for Controlling the Exploitation of Enterprises, Based on Short Term Output Plans:* Z. Witkowski. *Elements of Certain Problems in Public Finance:* L. Kurowski. *Problems of Standardising the Means of Exchange:* T. Choliński. *The Structure of Monetary Circulation and its Significance:* M. Kucharski. *The Balance of Trade:* A. Siebeneichen.

Pari I Kredit (Monnaie et Credit) (Bulgarian text, French and Russian summaries).

No. 3, 1949. *The Fifth Anniversary of the Fatherland Front Government :* I. Paliisky. *The Financial Organisation of our Industry in the Transition from Capitalism to Socialism :* L. Ralchev. *Principles of the Finance of Agricultural Investment :* D. Sapundzev. *Financial Control as an Indispensable Condition for the Consolidation of Accounting in a Socialist Economy :* A. Ganeva. *The Special Character of Internal Loans under Socialism :* P. Manevsky. *Conference of Bulgarian Bank Representatives : Report.*

No. 4, 1949. *The Utilization of Soviet Experience in Banking :* C. Lazarov. *The New Lines of Development of the Bulgarian National Bank :* A. Mechkarov. *New Methods for the Attraction of Bank Deposits under the Socialist System :* I. Paliisky. *The Credit and Control of Popular Banks :* A. Kassabov. *The System of Control in Soviet Investment Banks :* D. Sapundzev. *National Income and Capital Investment :* K. Popov. *The Housing Crisis and Loans and Savings Deposits for the Construction of Houses :* K. Pergelov.

The Economic Studies Quarterly (The articles are published in Japanese, without English Summaries).

Vol. 1, No. 1, January 1950. *Joseph A. Schumpeter :* I. Nakayama. *A General Theory of Stability :* T. Yasui. *Comparative Statics and Stability Conditions :* M. Fukuoka. *Notes on Special Dynamic Process :* H. Furuya. *Minimum Cost of Living and Engel's Law :* H. Iemoto. *The Concept of Income :* K. Kinoshita. *Some Considerations on the Theory of Multiplier :* K. Mizutani. *On the Theoretical Model of the Postwar Japanese Economy :* M. Shinohara. *Changes in the Volume of Foreign Trade and the National Income :* T. Watanabe.

NEW BOOKS.

British.

Annual Report of the Council, 1948–1949. London: Royal Institute of International Affairs, 1950. 9″. Pp. 94. 1*s*.

[A record of the activities of Chatham House during the year ended June 30, 1949.]

British Tourist and Holidays Board. Report on an Inquiry carried out by the Hotels Committee into Hotel Services in Great Britain from the User's Point of View. London : British Tourist and Holidays Board, 1950. 9″. Pp. 12. 3*d*.

[A survey of the service provided by hotels, prepared by the Hotels Committee of the British Tourist and Holidays Board with one eye on invisible exports.]

Burton (J. H.). Control through Accounts. London : Gee & Co., 1950. 8½″. Pp. 63. 8*s*. 6*d*.

[This book has been developed from a lecture given by the author during February 1949. It shows how accounts may be used to assist in control of a business in various ways. These include costing, control over stocks, proper stores accounts, careful apportionment of overheads so that goods are properly priced, budgetary control and competent use of statistics. Each of these aspects is examined in turn.]

Busschau (W. J.). The Measure of Gold. The role of gold as international money. South Africa : Central News Agency, 1949. 8½″. Pp. ix + 164. 12*s*. 6*d*.

[To be reviewed.]

The Certified and Corporate Accountants' Year Book, 1949–50. London: Association of Certified and Corporate Accountants, 1950. 7″. Pp. 636.

[Lists of members, both in aphabetical order and under the towns in which they practice. Particulars of examinations are also included.]

CHATERJI (R.). Indian Economics. 2 vols. Calcutta: Chatterjee, 1949. 8½″. Pp. 474. Rs. 8.

[A new, fourth, edition of an established text-book of Indian economics. The first volume covers the economic geography of India, its population, social organisation, the economic transition of this century, the special problems of Indian agriculture, including land tenures. That volume goes on to deal with Indian industries, their labour supplies and the problems of foreign trade. The second volume covers transport, currency, banking and finance, and the problems of economic reconstruction, planning and controls.]

CLEMENS (J. H.). Balance Sheets and the Lending Banker. A new assessment of accounts and accounting ratios in relation to bank advances. London: Europa Publications, 1949. 9″. Pp. 197. 12*s*. 6*d*.

[To be reviewed.]

COASE (R. H.). British Broadcasting. A study in monopoly. London: London School of Economics and Longmans, Green, 1950. 9″. Pp. viii + 206. 12*s*. 6*d*.

[To be reviewed.]

Company Formation in Australia. Melbourne and London: Union Bank of Australia, 1950. 8½″. Pp. 60.

[This is a small book of notes which deals with the legal problems confronting anyone who wishes to set up a company in Australia. They cover a wide range of issues, including income tax, factory and health regulations, patents, land tenure, as well as the more obvious issues of capital raising, statutory meetings and so on.]

Co-operators' Year Book, 1950. Leicester: Co-operative Printing Society, 1950. 7½″. Pp. 128. 1*s*.

[This year book contains a series of articles on different aspects of co-operation.]

DEODIKAR (G. B.). A Design for the Layout of Indian Transport and Communication System. Bombay: Indian Society of Agricultural Economics, 1949. 10″. Pp. ix + 97.

[A proposal for improving India's transport, and thus her productivity, by constructing a rectangular grid of roads, roadways and air services, placing new federal cities at the main points of intersection.]

DICKINSON (G.). Road Haulage Operation. A students' handbook. London: Isaac Pitman, 1950. 8½″. Pp. viii + 187. 15*s*.

[To be reviewed.]

Dollar Sales Advertising and Sales Promotion. A practical guide to the advertising and merchandising of British goods in the U.S.A. and Canada. London: Dollar Exports Board, 1950. 9½″. Pp. 24. 1*s*.

[This booklet is addressed to manufacturers wishing to break into the American market. It is intended as a practical guide to the problems of advertising and merchandising. It is packed with hard-headed and realistic information and advice, and will be very useful to any potential exporter to those markets. In particular, it insists that advertising should answer the question of the potential American buyer "What is there in it for me?" rather than make vague appeals based on the quality of British products.]

EDWARDS (R. S.). Co-operative Industrial Research. London: Pitman, 1950. 8½″. Pp. xiv + 285. 20*s*.

[To be reviewed.]

European Steel Trends.' London: British Iron and Steel Federation, 1950. 10". Pp. 9.

[This is in effect a summary and critique of the recent report of the Economic Commission for Europe entitled *European Steel Trends in the Setting of the World Market.*]

FASNACHT (G. E.). Lord Acton on Nationality and Socialism. London: Oxford University Press, 1949. 7". Pp. 32. 2*s*. 6*d*.

[Two lectures given by Mr. Fasnacht, who is a Staff Lecturer of the Oxford Delegacy for Extra-Mural Studies, at a Summer School in Oxford during 1949.]

GANDHI (M. P.) (Ed.). The Indian Cotton Textile Industry (1949 annual). Bombay: Gandhi & Co., 1949. 10". Pp. lii + 174 + xxxi. Rs. 6.

[This provides one of the best annual reviews of the Indian Cotton Industry. In 1949 conditions had changed greatly from those of earlier years when insufficiency of supply, black markets, complaints of delays had been the chief features. Now the position is reversed. Demand is tapering off faster than suits the health of the industry, stocks are accumulating, production is being reduced, prices are being cut, mills are being closed and unemployment is mounting.]

GANDHI (M. P.) (Ed.). The Indian Handloom Weaving Industry Annual, 1949. Bombay: Gandhi & Co., 1949. 9½". Pp. 68. Rs. 1.8.0.

[A new edition of this Annual, which gives detailed information and statistics regarding the Indian hand loom industry. In 1949 the hand-loom industry was in the doldrums. This was partly because war and post-war boom conditions were disappearing, partly because of interruptions of trade with Pakistan.]

HAWTREY (R. G.). The Balance of Payments and the Standard of Living. London: Royal Institute of International Affairs, 1950. 8½". Pp. 158. 8*s*. 6*d*.

[To be reviewed.]

HAWTREY (R. G.). Currency and Credit. Fourth edition. London: Longmans, Green, 1950. 8½". Pp. viii + 475. 25*s*.

[In this fourth edition Professor Hawtrey has substantially revised the book as compared with the third edition of 1927. The chief changes are: a revision of Chapter II, where he has developed more fully his views of the quantity theory as a particular case of a demand function and his differences of interpretation from those of Keynes, Chapters IV and V now deal respectively with Consumers' Income and Outlay and with Investment and Disposals—Professor Hawtrey is still convinced of the efficacy of small changes of interest rates in influencing capital outlay, a new Chapter VIII covers more concisely the problems of the mechanism of Foreign Exchange and removes a section in which (as Professor Hawtrey explains) he accepted the view that "the position of London as a financial centre depended on a faithful adherence to the standard and a familiar gold parity," and in which, therefore, he was building upon an unchallenged, but unverified, dogma of the City, the chapters in the earlier edition which dealt with Financial Crises, Money and Coinage and the Theory of Banking, have been suppressed and the points dealt with more briefly elsewhere or in a new shorter chapter on Financial Crises. The space saved by these abbreviations has been devoted to the fuller treatment of the quantity theory and of income and outlay indicated above. It is good to see an old friend so effectively rejuvenated.]

HICKS (J. R.). A Contribution to the Theory of the Trade Cycle. Oxford: Clarendon Press, 1950. 7½". Pp. 201. 10*s*.

[To be reviewed.]

HOURSTON (J. P.). Conversations in the Train. London: Becks' Printing Works, 1950. 9*d*.

[In this series of imaginary conversations in the train, the author argues with a working-class acquaintance, with slightly socialist leanings, stage by stage, the virtues of a free-enterprise economy. The economist, reading between the lines, will see, turn by turn, the elements of the economic theory of a free-enterprise system simply and effectively set out and carrying conviction to the hypothetical companion of the journey. The treatment is amusing, skilful, but designedly slight.]

HULBERT-POWELL (EVELYN). Our Threatened Industries. London: Hollis & Carter, 1950. 8½″. Pp. viii + 134. 4*s*. 6*d*.

[This book, which appeared a few days before the election, is a survey of the recent history and achievements of the industries threatened by nationalisation—iron and steel, sugar refining, cement, industrial assurance, the wholesale meat trade, water supply, the wholesale fruit and vegetable trade. The author would almost certainly not claim that it was anything but a vigorous ex-parte statement of the case for these industries to continue under private ownership. The book does, nevertheless, contain a substantial proportion of the evidence on which a more dispassionate judgment should be based, and anyone concerned to make up his own mind will find much valuable matter in it.]

INNIS (H. A.). Empire and Communications. Oxford: Clarendon Press, 1950. 7½″. Pp. 230. 15*s*.

[To be reviewed.]

The Institute of Chartered Accountants in England and Wales. List of Members, 1950. London: Institute of Chartered Accountants, 1950. 8″. Pp. 720.

[The annual list of members and their firms, together with the officers and committee of the Council and its District Societies and lists of members in practice in different towns.]

JEFFERYS (J. B.) assisted by MCCOLL (MARGARET) and LEVETT (G. L.). The Distribution of Consumer Goods. National Institute of Economic and Social Research. Economic and Social Studies, IX. Cambridge University Press, 1950. 9″. Pp. xix + 430. 35*s*.

[To be reviewed.]

JEFFREYS (R.). The King's Highway. An historical and autobiographical record of the developments of the past sixty years. London: Batchworth Press, 1949. 8″. Pp. xii + 292. 18*s*.

[To be reviewed.]

JOHNSTON (K. H.). British Railways and Economic Recovery. A sociological study of the transport problem. London: Clerke & Cockeran, 1949. 8″. Pp. 352. 18*s*.

[To be reviewed.]

KLEIN (L.). The Keynesian Revolution. London: Macmillan, 1950. 8½″. Pp. 218. 15*s*.

[To be reviewed.]

LANCASTER (N. G.). The Accounts of a Small Company, illustrating the operation of budgeting and standard costs. Birmingham: Cornish Bros., 1949. 8½″. Pp. 18. 2*s*.

[The first of a series of pamphlets to be published by the Department of Economics and Business Administration of the City of Birmingham Commercial College. Its purpose is to illustrate the operations of standard costing and budgeting by applying them to an imaginary small engineering company.]

LLOYD (A.). Quaker Social History, 1669–1738. London: Longmans, Green, 1950. 8½″. Pp. xv + 207. 21*s*.

[To be reviewed.]

London Travel Survey 1949. London: London Transport Executive, 1950. 9″. Pp. 47.

[A statistical survey, based on sampling methods, of London travel, including both travel to work and other more casual travel. It analyses weekly expenditure on travel in relation to income, the times of peak demand and the times spent in travel, the proportions of journeys involving changes and the preferences as regards types of transport.]

MacGregor (J. J.). The Forest Economy of Three Private Estates in Great Britain. University of Oxford: Imperial Forestry Institute, 1949. 10″. Pp. 95. 7*s*. 6*d*.

[This monograph is based on the records of three separate and widely scattered estates, for each of which fairly detailed records are available over a long run of years.]

Maunier (R.). Edited and translated by E. R. Lorimer. The Sociology of Colonies. An introduction to the study of race contact. 2 vols. London: Routledge & Kegan Paul, 1949. 8½″. Pp. xii + 767. 63*s*.

[To be reviewed.]

Mehta (M. M.). Structure of Cotton-Mill Industry of India. Allahabad: Central Book Depot, 1949. 9″. Pp. 327. Rs. 12.8.

[To be reviewed.]

Meredith (H. O.). Economic History of England. A study in social development. 5th edition. London: Pitman, 1950. 9″. Pp. vi + 434. 10*s*. 6*d*.

[This new, fifth, edition of a text-book familiar to many generations of students, has been prepared by Mr. C. Ellis. Part V, entitled "The Widening of the Economic Struggle—the Twentieth Century," contains much new material, particularly in two chapters dealing with "Departure from Laisser-Faire" and "The Changing Economic Structure." They take account of events down to 1947.]

Milward (G. E.) (Ed.). Large-Scale Organisation. London: Macdonald & Evans (For the Institute of Public Administration), 1950. 8½″. Pp. xxi + 225. 16*s*.

[This volume, produced for the British Institute of Management, prints a series of short accounts, by persons high in the bodies concerned, of the forms of organisation of some of the leading British industrial, commercial and public institutions. Thus, amongst others, Sir Geoffrey Heyworth gives an account of Lever Brothers' and Unilever's organisation; Mr. Lynex writes about I.C.I.; Mr. Underwood describes the Prudential; Mr. Shone describes the Iron and Steel Federation. Other institutions similarly described include the Ministry of National Service, the Post Office, the British Transport Commission, the L.C.C., the Bank of England, the Midland Bank, the Board of Inland Revenue. Mr. Simpson, Director of Organisation and Methods at the Treasury, writes an introduction, and Sir Charles Renold sums up at the end.]

Mottram (R. H.) and **Coote** (C.). Through Five Generations. The History of the Butterley Company. London: Faber & Faber, 1950. 8½″. Pp. 181. 12*s*. 6*d*.

[To be reviewed.]

Nevile (G. W.). Denationalisation in Practice. London: Individualist Bookshop, 1950. 7½″. Pp. 45. 2*s*.

[A pre-election pamphlet showing how nationalised industries have been denationalised in other countries. Among examples quoted are the sale of the Australian State Shipping and the separation of various state railways in varying degrees from political administration. If one leaves out the denationalisation of industries and transport systems which had been taken under government control during war-time for special war-time reasons, the instances of actual denationalisation, in the full sense of return to private ownership, seem to be very few.]

Ord (L. C.). Industrial Facts and Fallacies. A contribution to national recovery. London: Mayflower Publishing Company, 1950. 7″. Pp. xi + 207. 10*s*. 6*d*.

[To be reviewed.]

The Pattern and Finance of Foreign Trade. With special reference to the City of London. London: Europa Publications (for the Institute of Bankers), 1949. 8½". Pp. 231. 15*s.*

[To be reviewed.]

Patterns of British Life. London: Hulton Press, 1950. 10½". Pp. 144. 25*s.*

[To be reviewed.]

P.E.P. Motor Vehicles. A report on the industry. London: P.E.P., 1950. 9½". Pp. 164. 15*s.*

[To be reviewed.]

REID (D. C.). Money and Organisation. London: Macdonald & Evans, 1950. 8½". Pp. ix + 128. 10*s.*

[To be reviewed.]

ROOVER (R. DE). Gresham on Foreign Exchange. An essay on early English Mercantilism with the text of Sir Thomas Gresham's memorandum for the understanding of the Exchange. Cambridge, Mass.: Harvard University Press (London: Geoffrey Cumberlege), 1949. 9". Pp. xiv + 348. 48*s.*

[To be reviewed.]

SCHLESINGER (R.). Marx, His Time and Ours. London: Routledge & Kegan Paul, 1950. 8½". Pp. xi + 440. 30*s.*

[To be reviewed.]

SCHUMPETER (J. A.). Capitalism, Socialism and Democracy. London: Allen & Unwin, 1950. 8½". Pp. xvi + 412. 16*s.*

[This is a new edition, which will be reviewed, of a now well-known book, first reviewed in the ECONOMIC JOURNAL of December 1943, by Mrs. Robinson. In this new edition, Prof. Schumpeter, of whose recent death this serves as a sad reminder, has taken the opportunity to comment upon the English developments since the war and to fit them into the general frame work of his analysis.]

SEWELL BRAY (F.). The Measurement of Profit. London: Oxford University Press, 1950. 8½". Pp. viii + 80. 10*s.* 6*d.*

[To be reviewed.]

SEWELL BRAY (F.). Social Accounts and the Business Enterprise Sector of the National Economy. University of Cambridge Department of Applied Economics Monographs, 2. Cambridge: University Press, 1949. 9½". Pp. viii + 100. 10*s.* 6*d.*

[To be reviewed.]

SEWELL BRAY (F.) and SHEASBY (H. B.). Design of Accounts. Third edition. London: Oxford University Press, 1950. 8½". Pp. 372. 15*s.*

[In this new edition of the book, reviewed by Mr. Stone in the ECONOMIC JOURNAL of June 1946, the author has brought it up-to-date in several ways. The principal of these is that it now includes specimen accounts related to the requirements of the Companies Act, 1948.]

SMITH (J. H.) and RICHARDSON (PRUDENCE P.). Farming in the Lincolnshire Limestone Areas, 1936 to 1947. Sutton Bonington, Loughborough: Department of Agricultural Economics, University of Nottingham School of Agriculture, 1950. 9½". Pp. 99. 2*s.* 6*d.*

[A detailed statistical study by two members of the Department of Agricultural Economics of the University of Nottingham School of Agriculture of two areas in Lincolnshire. It covers the results of the years 1936–47. Varying numbers of farms composed the sample in different years, but roughly 20 to 30 farms in each area were included. Figures are given, amongst other things, for yields, receipts, farm income and the distribution of the income. Some of the latter figures are interesting. For the three years 1937–39, on the Kesteven Limestone the income divisible between wages, rent and farm income per 100 acres was about £410; for the years 1945–47 it was about £1,140. The verdict of the authors is that "the fundamental problem in the limestone areas is to obtain a better balance between cash crop and livestock enterprises, and unless this can be achieved there is real risk that the fertility of these soils will be exhausted."]

SMITH (O. R.). The Conduct of and Procedure at Public Company and Local Government Meetings. 18th edition. London: Jordan & Sons, 1950. 7″. Pp. xvi + 263. 10*s*. 6*d*.

[A new edition of a standard work on the conduct of meetings.]

SOMERVELL (H.). Industrial Peace in our Time. London: Allen & Unwin, 1950. 8½″. Pp. 224. 15*s*.

[To be reviewed.]

ROPER (J. I.). Joint Consultation and Responsibility in Modern Industry. A guide for trade union students. London: Workers' Educational Association, 1950. 8½″. Pp. 72. 2*s*.

[A W.E.A. Study Outline which deals with the new problems confronting trade unionism, industry, trade unions and management respectively in relation to the democratic idea, the difficulties in practice, the concept of workers' control, works councils and consultative committees, joint responsibility and education for responsibility.]

THOMAS (L.). The Development of Wire Rod Production. A study of the industry with particular reference to the United Kingdom. Cardiff: Guest Keen & Nettlefolds, 1949. 10″. Pp. 78. Privately circulated.

[A popular and generously illustrated account of this branch of the steel industry, published for private circulation by Guest Keen and Nettlefolds (South Wales), Ltd. It contains a large body of statistical information about the industry and a comparison of United Kingdom and United States rod mills.]

UNWIN (SIR STANLEY). How Governments Treat Books. London: Allen & Unwin, 1950. 7½″. Pp. 8.

[A reprint of an Article in *Life and Letters* in which Sir Stanley Unwin castigates with his customary vigour the governments which tax books and learning. An inserted slip draws our attention to the latest folly; a purchase tax of 100% declared by our own Board of Trade to be collectable on the sixpenny sets of book tallies designed for children.]

Whitaker 1950. Complete edition. London: Whitaker, 1950. 7½″. Pp. 1126 + xxix. 12*s*. 6*d*.

[Besides the usual information, there is some new and useful matter covering the staffs of the boards of nationalised industries.]

WRIGHT (F. J.). Commercial Law. Vol. 2. London: English Universities Press, 1950. 8½″. Pp. xi + 331. 10*s*. 6*d*.

[This new second volume is primarily concerned with the Sale of Goods, Negotiable Instruments, Carriage, Insurance. A section deals rather briefly with Legal Forms of Undertakings. Another section covers such matters as bankruptcy, arbitration, patents, designs and copyright.]

American.

ALASCO (J.). Intellectual Capitalism. A Study of changing ownership and control in modern industrial society. New York and London: World University Press, 1950. 8″. Pp. xviii + 140. $3.00.

[To be reviewed.]

ALBRECHT (W. P.). William Hazlitt and the Malthusian Controversy. Albuquerque: University of New Mexico Press, 1950. 9″. Pp. 124.

[A study of the origin and settings of Malthus' *Essay* and an analysis of Hazlitt's *Reply*.]

ALTMAN (G. T.). Invisible Barrier. A tax specialist's analysis of the business cycle. Los Angeles: DeVorss, 1949. 8″. Pp. 208.

[To be reviewed.]

ALTMAN (R.). Availability for Work. Cambridge, Mass.: Harvard University Press (London: Geoffrey Cumberlege), 1950. 9″. Pp. xv + 350. 36*s*.

[This monograph seeks to answer in the American context the problem that was so familiar before the war in England: What exactly constitutes a condition of "Genuinely seeking work"? With increasing numbers of agencies handling relief in various forms the tests of availability for work have become of great practical importance.]

ANDERSON (B. McA.). Economics and the Public Welfare. New York: D. van Nostrand Company (London: Macmillan), 1949. 9″. Pp. xiv + 602. 42*s*.

[To be reviewed.]

ANDERSON (M. D.). Total Business Fluctuations. Gainesville, Florida: Kallman Publishing Company, 1949. 9″. Pp. 148. $3.75.

[This book, a revised version of the author's *Theory of Economic Aggregates*, belongs to the old-fashioned school of econometrics in respect of both aspects of this branch of economics. The theoretical formulation, despite a formidable array of what the author describes as "useful mathematical quasi-identities," is essentially an extension of the Fisher version of the quantity theory; and while the formula for profit is similar to one of the "fundamental equations" propounded by the late Lord Keynes in his *Treatise of Money*, the *General Theory* and subsequent controversy seem to have escaped the author's attention. Monetary theorists will also be dissatisfied with the introduction of "the Weber-Fechner psycho-physical law" and the omission of the price level in the determination of the marginal utility of money. On the statistical side, verifications and applications of the theoretical models are presented with too little attention to the difficulties of obtaining reliable information from simple correlations of time-series. Nevertheless, some of the author's mathematical manipulations yield interesting results: as an added inducement to the reader, the last chapter outlines a method of forecasting the average price of common stocks from quarter to quarter.]

BEATTY (SISTER MARY ALEXINE). Bank Failures in the District of Columbia in the Twentieth Century. Washington D.C.: Catholic University of America Press, 1949. 9″. Pp. xii + 272.

[A Ph.D. Thesis of the Catholic University of America.]

BOSCHAN (P.). National Income, a cross section view. New York: Augustus M. Kelley, 1950. 8½″. Pp. 32. $1.00.

[An attempt to present national-income data diagramatically.]

BURNS (A. F.). Production Trends in the United States since 1870. New York: Augustus M. Kelley, 1950. 8½″. Pp. xxxii + 363. $4.00.

[A report by a different publisher of a well known book, which first appeared in 1934.]

CADMAN (J. W.). The Corporation in New Jersey. Business and Politics, 1791–1875. Cambridge, Mass.: Harvard University Press (London: Geoffrey Cumberlege), 1949. 8½″. Pp. xvi + 462. 48*s*.

[To be reviewed.]

GLARK (J. M.). Strategic Factors in Business Cycles. New York : Augustus M. Kelley, 1949. 8½". Pp. xi + 238. $2.50.

[This is a reprint, handled by a new publisher, of Prof. J. M. Clark's well-known book, which first appeared in 1933.]

CLEMENCE (R. V.) (Ed.). Readings in Economic Analysis. Vol. I. General Theory. Pp. xi + 131. Vol. II. Prices and Production. Pp. xi + 259. Cambridge, Mass. : Addison-Wesley Press Inc., 150. 9".

[To be reviewed.]

DELIVANIS (D.) and CLEVELAND (W. C.). Greek Monetary Developments, 1939–1948. A case study of the consequences of World War II for the monetary system of a small nation. Bloomington, Indiana : Indiana University Bookstore, 1949. 10". Pp. 196. Paper $3.00. Cloth $3.50.

[This monograph is described as a case study of the consequences of the Second World War for the monetary system of a small nation. Part I describes the history in five phases, with some analysis of each. Part II discusses the monetary reforms of 1944 and 1945 and the prospects of further reform as seen in 1948.]

DICKINSON (F. G.). An Analysis of the Ewing Report. Chicago : American Medical Association, 1949. 11½". Pp. 14.

[The Ewing Report, commissioned by President Truman and published just before the presidential election, called for a drastic expansion of government health programmes, through a system of compulsory health insurance, as a means to realise certain "feasible" health goals during the next decade. This review of the report, by the Director of the Bureau of Medical Economic Research of the American Medical Association, vigorously attacks the arguments and conclusions of the report. It argues, in particular, that no medical improvements can prevent deaths; that all they can do is to postpone deaths and to make sure that they are attributable in greater degree to the normal causes of death in old age; that American medicine has made such remarkable progress during the past fifty years that the expectation of life at birth is now sixty-eight years against forty-nine years at the beginning of the century. All this is undoubtedly true and important. But Dr. Dickinson's review manages to convey a sense of complacency in the face of such killers as cancer, the communicable diseases, and infant and maternal mortality that, to a layman at least, appears rather shocking. Doubtless, the Ewing Report was crude and possibly even animated by political considerations. Nevertheless, the improvement of national health is a proper objective to pursue. Dr. Dickinson contends that, since the nation as a whole spends only 4% of its national income on health and medical services, that is what everyone (including the families of the sick) really desire to spend in this way. Are there in America no families, with sick members, which, if means existed for them to spend more on such services now, would willingly forego other forms of expenditure in the future ? Is not that the real essence of a health service based on insurance ?]

DICKINSON (F. G.). A Brief History of the Attitude of the American Medical Association toward Voluntary Health Insurance. Chicago : American Medical Association, 1949. 8½". Pp. 30.

[This pamphlet traces the official policy of the American Medical Association to voluntary health insurance since 1916. The conclusion is that "the American Medical Association has never opposed the development of voluntary sickness insurance plans in this country (*i.e.*, U.S.A.) as they exist to-day." But, in earlier years, plans having an uncertain actuarial basis were considered dangerous, and objections were made to certain features of early years which were considered to be inimical to both patient and physician.]

EAGLETON (C.) (Ed.). 1949 Annual Review of United Nations Affairs. New York University Press (London : Geoffrey Cumberlege), 1950. 9". Pp. 322. 40*s*.

[This is a volume of addresses to a Conference organised by New York University on the subject of United Nations Affairs. Most of the addresses were delivered by United Nations officials, and they deal with the problems of each department. Those dealing with the work of the Economic and Social Council were Sidney Bell, Edwin Henson, Alva Myrdal, Lin Mousheng.]

GARNETT (A. CAMPBELL). Freedom and Planning in Australia. Madison: University of Wisconsin Press, 1949. 8″. Pp. x + 331. $4.00.

[To be reviewed.]

GINZBERG (E.). A Pattern for Hospital Care. Final Report of the New York State Hospital Study. New York: Columbia University Press (London: Geoffrey Cumberlege), 1949. 9″. Pp. xxiv + 368. 36*s*.

[To be reviewed.]

GOLD (B.). Wartime Economic Planning in Agriculture. New York: Columbia University Press (London: Geoffrey Cumberlege), 1949. 10″. Pp. 594. 55*s*.

[To be reviewed.]

Governmental Mechanism for the Conduct of United States Foreign Relations. Washington D.C.: Brookings Institution, 1949. 9″. Pp. 58. 50 cents.

[This well-planned and authoritative pamphlet sets out the risks of the various elements of the Executive Branch and of Congress itself in controlling the conduct of U.S. Foreign Relations, and discusses the Congressional–Executive relations, and those of the Governor with the people so far as they concern this field.]

GREIG (GERTRUD B.). Seasonal Fluctuations in Employment in the Women's Clothing Industry in New York. New York: Columbia University Press (London: Geoffrey Cumberlege), 1949. 9″. Pp. 164. 22*s*.

[To be reviewed.]

GUTHRIE (J. A.). The Economics of Pulp and Paper. Pullman, Washington: State College of Washington Press, 1950. 9″. Pp. xi + 194. Cloth $2.50; Paper $1.50.

[The author, who is Professor of Economics in the State College of Washington, has sought to bring together, from official and other sources as much information as is available about this important but somewhat secretive industry. In particular he has succeeded in throwing a good deal of new light on costs, prices and profits. But even so his first conclusion relates to the dearth of information. The great problem facing the industry is the increasing shortage of pulpwood.]

HANEY (L. H.). History of Economic Thought. New York and London: Macmillan, 1949. 8″. Pp. xxii + 996. 37*s*. 6*d*.

[This is a new, fourth, edition of a book which was first reviewed by Mr. Fay in the ECONOMIC JOURNAL of December 1911, and of which the third edition was noted in the issue September 1936. Five new chapters deal with Wicksell, Cycle Theory, Limited-competition Theory, Keynes, and General Equilibrium Theory.]

HARRIS (SEYMOUR E.). The Market for College Graduates. Cambridge, Mass.: Harvard University Press (London: Geoffrey Cumberlege), 1949. 8″. Pp. xiv + 207. 32*s*.

[To be reviewed.]

HIDY (R. W.). The House of Baring in American Trade and Finance. Cambridge, Mass.: Harvard University Press (London: Geoffrey Cumberlege), 1949. 8½″. Pp. xxiv + 631. 60*s*.

[To be reviewed.]

HISPANIC FOUNDATION OF THE LIBRARY OF CONGRESS. Handbook of Latin American Studies: 1946. No. 12. Edited by F. Aguilera, assisted by Charmion Shelby. Cambridge, Mass.: Harvard University Press (London: Geoffrey Cumberlege), 1949. 9″. Pp. 364. 68*s*.

[To be reviewed.]

HUNTER (L. C.). Steamboats on the Western Rivers. Cambridge, Mass.: Harvard University Press (London: Geoffrey Cumberlege), 1949. 9″. Pp. xiii + 684. 80*s*.

[This history of the steamboats on the American rivers, which played such an immense part in American economic development, begins with the technical story. It describes the first beginnings, the structural evolution of the design of the boats and the mechanical improvements in their engines. It goes on to the improvements to the rivers and the methods of circumventing the troubles of rapids, snags and bars. Next we come to the techniques of operation, the dangers and the accidents. Then we are plunged into the more economic aspects: the business organisation, sources of capital, profits and losses. Next come the social aspects: life on board, the fares, trials, discomforts, hardships. Then the crews: the sources of recruitment, their working conditions and discipline. Finally comes the period of decline and the extinction of the steamboat by the railways. It is a fascinating story and a valuable addition to American history.]

INDUSTRIAL RELATIONS RESEARCH ASSOCIATION. Membership Directory. October 1949. Chapman, Illinois: Industrial Relations Research Association, 1949. 9″. Pp. xii + 137.

[An alphabetical list of members of the Association followed by a topographical list of members in various towns and an occupational list of members in various occupations, including various academic categories, management, union, government, legal and consultant.]

INDUSTRIAL RELATIONS RESEARCH ASSOCIATION. Proceedings of First Annual Meeting. Cleveland, Ohio, December 29–30, 1948. Edited by Milton Derber. Champaign, Illinois: Industrial Relations Research Association, 1949. 9″. Pp. 255.

[These proceedings of the First Annual Meeting contain the papers and the principal contributions to the subsequent discussions. Writers of papers include E. E. Witte, E. S. Mason, Lloyd Reynolds, G. W. Taylor, H. R. Northrup, J. D. Brown, H. M. Cassidy, A. Kornhauser, C. W. Mills.]

INDUSTRIAL RELATIONS RESEARCH ASSOCIATION. Psychology of Labor-Management Relations. Edited by A. Kornhauser. Champaign, Illinois: Industrial Relations Research Association, 1949. 9″. Pp. 122. $1.50.

[This contains seven papers prepared for a Conference on the subject matter of its title, held at Denver during September 1949. They have been introduced by Prof. Arthur Kornhauser of Wayne University.]

KIMBALL (M.). Corporate Finance, Principles and Practice. Ames, Iowa: Littlefield, Adams, 1949. 8″. Pp. viii + 305.

[To be reviewed.]

MACLAURIN (W. R.) assisted by HARMAN (R. JOYCE). Invention and Innovation in the Radio Industry. New York and London: Macmillan, 1949. 8″. Pp. 304. 45*s*.

[The purpose of this very interesting monograph is to see how the patent system has worked in a particular industry with rapid technical advance, what have been the sources of innovation and what have been the relative contributions of the older firms and the new entrants who came in to exploit an innovation. It seeks to relate the history of invention, innovation (and litigation) in the radio and television industries to Schumpeter's theories of the role of technological change in economic development.]

MERIAM (L.), SCHLOTTERBECK (K. T.) and MARONEY (MILDRED). The Cost and Financing of Social Security. Washington D.C.: Brookings Institution, 1950. 9″. Pp. ix + 193. $3.00.

[To be reviewed.]

MERLIN (S. D.). The Theory of Fluctuations in Contemporary Economic Thought. New York: Columbia University Press (London: Geoffrey Cumberlege), 1949. 9″. Pp. 168. 22*s.*

[To be reviewed.]

METZ (H.) and THOMSON (C. A. H.). Authoritarianism and the Individual. Washington D.C.: Brookings Institution, 1950. 9″. Pp. ix + 371. $3.50.

[To be reviewed.]

MILLER (J. P.). Pricing of Military Procurements. New Haven: Yale University Press (London: Geoffrey Cumberlege), 1949. 9″. Pp. xiv + 292. 32*s.*

[To be reviewed.]

MITCHELL (WESLEY C.). The Backward Art of Spending Money and Other Essays. New York: Augustus M. Kelley, 1950. 6½″. Pp. vii + 421. $3.00.

[A small, handy new edition of Prof. Wesley Mitchell's well-known book of Essays. The first edition was reviewed by Prof. Phelps Brown in the ECONOMIC JOURNAL of September 1937.]

MURPHY (H. C.). The National Debt in War and Transition. New York and London: McGraw-Hill, 1950. 9″. Pp. 295. 30*s.*

[To be reviewed.]

NATIONAL CONFERENCE OF SOCIAL WORK. Social Work in the Current Scene. New York: Columbia University Press (London: Geoffrey Cumberlege), 1950. 9″. Pp. ix + 392. 38*s.*

[This volume reprints thirty-five papers presented to the National Conference on Social Work held at Cleveland, Ohio, in June 1949. It divides into three sections: philosophy; programme; practice. A very wide range of problems are covered, ranging from human rights, and the government and the individual, to mental and medical care, social security, industrial welfare, housing, the functions of psycho-therapy, juvenile delinquency, techniques of social work.]

NEFF (F. A.). Economic Doctrines. New York and London: McGraw-Hill, 1950. 9″. Pp. xii + 532. 38*s.* 6*d.*

[To be reviewed.]

OHLIN (B.). The Problem of Employment Stabilization. New York: Columbia University Press (London: Geoffrey Cumberlege), 1949. 8″. Pp. 173. $2.75.

[To be reviewed.]

PARMELEE (M.). Geo-Economic Regionalism and World Federation. New York: Exposition Press, 1949. 8½″. Pp. 137. $2.50.

[This book is described as " a plan for global peace and prosperity through a world federation organised in accordance with the geo-economic facts of life."]

PLANNING PAMPHLETS. No. 70. *Federal-State-Local Relations in Agriculture.* By J. D. Black. Washington D.C.: National Planning Association, 1950. 7½″. Pp. vi + 46. 50 cents.

[The points of overlapping and conflict between Federal, State, County and other local agencies are many. The chief are the Agricultural Extension Service, the Production and Marketing Administration, the Soil Conservation Service, the

Reclamation Service of the Department of the Interior and the Tennessee Valley Authority. This pamphlet examines the various activities of the Federal, State and Local Authorities and makes suggestions for their co-ordination.]

Proceedings of the International Statistical Conferences. Vol. IV. Edited by Elizabeth Phelps. Washington D.C.: Inter American Statistical Institute, 1949. 10″. Pp. 618.

[This volume prints, both in English and in Spanish, a record of the papers and proceedings of the First Session of the Inter-American Statistical Institute held in Washington during September 1947. Discussions were devoted to such questions as statistical training, classification and statistical practices in trade statistics, industrial and mining statistics, a world census of agriculture, and the need for subject classification for statistical materials.]

Robertson (D. H.). Banking Policy and the Price Level. An essay in the theory of the trade cycle. New York: Augustus M. Kelley, 1949. 7½″. Pp. xvii + 103. $1.75.

[This fourth, revised, printing of the American edition of Prof. Robertson's well-known book contains a most important new preface in which Prof. Robertson briefly sets out, *inter alia*, the relation of his own thinking, at the time of writing and subsequently, to that of Keynes.]

Robinson (D. E.). Collective Bargaining and Market Control in the New York Coat and Suit Industry. New York: Columbia University Press (London: Geoffrey Cumberlege), 1949. 9″. Pp. 248. 28*s.*

[This monograph records the history and analyses the experiences of the system of collective bargaining which has existed for some forty years in the industry concerned.]

Schlaifer (R.) and Heron (S. D.). Development of Aircraft Engines. By R. Schlaifer. Aviation Fuels. By S. D. Heron. Harvard University: Graduate School of Business Administration, 1950. 8″. Pp. xviii + 754. $5.75.

[To be reviewed.]

Sievers (A. M.). Has Market Capitalism Collapsed? A Critique of Karl Polanyi's New Economics. New York: Columbia University Press (London: Geoffrey Cumberlege), 1950. 9″. Pp. 387. 38*s.*

[To be reviewed.]

Smith (A. H.). Economics for our Times. New second edition. New York and London: McGraw-Hill, 1950. 9″. Pp. 534. 22*s.* 6*d.*

[An attempt to make economics palatable and digestible by American techniques of packaging. It is replete with illustrations, cross-headings, sub-headings, aims of the chapter and a final quiz. It is assumed that the reader cannot take in more than ten lines of text without more intellectual stimulant of this kind. A European reader is left wondering how far how little knowledge can be expected to go, whether so little as is here purveyed is worth having, and for what age of infant this baby-food is designed.]

Socialism in America, 1950. Washington D.C.: Chamber of Commerce of the U.S.A., 1950. 9″. Pp. 74. 50 cents.

[A blood-curdling account of the horrors of Socialism in England, with the obvious lessons for America.]

Traynor (Dean E.). International Monetary and Financial Conferences in the Interwar Period. Washington D.C.: Catholic University of America Press, 1949. 9″. Pp. ix + 193.

[A Ph.D. Thesis of the Catholic University of America.]

Ulrich (D. N.), Booz (D. R.) and Lawrence (P. R.) Management Behavior and Foreman Attitude. Harvard University: Graduate School of Business Administration, 1950. 8″. Pp. 56. 75 cents.

[A case study based on the experience of an unidentified post-war plant in an unnamed "suburb of a large eastern city," which employed about 500 people and which, because of losses, was engaged in overhauling its methods of production. Between the higher management, new and full of goodwill but very ignorant of what was going on in the minds of the workers, and the large number of semi-skilled hand-labour operators at the work bench, whose tasks were continually being revised, was a thin bridge of supervisory personnel, who found it exceedingly difficult to reconcile the demands of the workers on one side and of management on the other, and who received little help from general management in this task. This study examines the problems involved.]

UMBREIT (M. H.), HUNT (E. F.) and KINTER (C. V.). Modern Economic Problems. New York and London: McGraw-Hill, 1950. 9″. Pp. xvii + 642. 40*s.* 6*d.*

[To be reviewed.]

UNIVERSITIES-NATIONAL BUREAU COMMITTEE ON ECONOMIC RESEARCH. Problems in the Study of Economic Growth. New York: National Bureau of Economic Research, 1949. 11″. Pp. 250. $2.00.

[To be reviewed.]

WOLFF (K. H.) (Ed.). The Sociology of Georg Simmel. Glencoe, Illinois: Free Press, 1950. 8½″. Pp. lxiv + 445. $5.50.

[To be reviewed.]

South American.

BAGU (S.). Economía de la Sociedad Colonial. Ensayo de historia comparada de America Latina. Buenos Aires: "El Ateneo", 1949. 8″. Pp. 300.

[This monograph is concerned with the early settlement of Latin America.]

French.

ALLAIS (M.). Abondance ou Misère. Paris: Librairie de Médicis, 1946. 7½″. Pp. 131.

[To be reviewed.]

ALLAIS (M.). À la recherche d'une discipline économique. Part I. L'économie pure. Vol. I and annexes. Paris: Centre d'Études Économetriques, 1943. 13″. Pp. 852, and 68.

[To be reviewed.]

ANGELOPOULOS (A.). L'État et la Prospérité Sociale. Nouveaux principes de finances publiques. Paris: Librairie Générale de Droit et de Jurisprudence, 1949. 9″. Pp. 198. 400 fr.

[The general purpose of this work is to provide the prospective reader with an outline of the theory and practice of social planning as accepted and developed in Western Europe and in the U.S.A. It is divided into three main sections. The first considers the evolution of State intervention in regard to the regulation of economic activity as influenced by the gradual changes in "progressive" thought towards social problems. To describe in any adequate fashion the changing functions of the State from feudal times to the outbreak of the late war in thirty-four pages is a singularly difficult task and, in view of the constant recourse to over-simplified judgments of events, the attempt is hardly successful. The second section sets out clearly enough the objectives of economic and social policy which in the author's opinion require fulfilment by State intervention, namely the provision of community services, responsibility for economic stability and equitable distribution of income. These objectives are then compared with existing national programmes. In the last section the objectives are shown to be capable of attainment only within the framework of economic planning conceived in terms of Keynesian theory as interpreted by socialist economists. This appears to justify the inclusion of a concise, if over-simplified, discussion of Keynesian theory unalloyed with any consideration of some of the practical difficulties of planning which Keynes and many of his followers have so carefully noted. A feature of the book is the mammoth bibliography compressed in footnotes which the diligent English reader will find useful if he desires to follow Continental discussion of contemporary social problems.]

AUBERT (JANE). La Courbe d'Offre. Paris: Presses Universitaires de France, 1949. 9″. Pp. 263.

[To be reviewed.]

BARTOLI (H.). La doctrine économique et sociale de Karl Marx. Paris: Éditions du Seuil, 1950. 9″. Pp. 414.

[To be reviewed.]

GEORGE (P.) and Others. Études sur la Banlieue de Paris. Paris: Armand Colin, 1950. 9½″. Pp. 175.

[This book, one of a well-known series of studies on the social sciences whose predecessors have been reviewed in this journal, consists of a number of monographs on the main features of the urbanisation of Paris in the last thirty years with particular reference to the sociological aspects of the growth of dormitory areas. Apart from the introductory study by Prof. George on the formative influences on the growth of urban agglomerations, which also delineates the research techniques used in the work, particular mention must be made of M. Lavaneyra's extensive study of the Paris commune of Saint Maur des Fossés. M. Lavaneyra illustrates the well-known urban phenomenon of cross-city travel from residence to work (described in Continental literature by the striking term "Pendelwanderung") with exhaustive statistics and then proceeds to examine the demographic, social and economic structure of the commune in detail. A shorter study by M. Elhai contains some useful comparative data on family budgets of persons living in the French equivalent of council houses. It should also be mentioned that the quality of paper and printing of this series, in many ways superior to that of many of the copious paper-bound volumes on the social sciences received from France since the end of the late war, is maintained in this number.]

GURVITCH (G.) (Ed.). Industrialisation et Technocratie. Paris: Armand Colin, 1949. 9″. Pp. xii + 214. 400 fr.

[It is symptomatic of the upheaval created by the war that Burnham's *Managerial Revolution*, first published in the United States in 1941, should only now become a subject of controversy in French academic circles. (A French translation appeared in 1947 under the misleading title of *L'Ere des Organisateurs*.) This book brings together in printed form the lectures and discussions of Burnham's book held at the Semaine Internationale of the Centre Études Sociologiques in Paris in 1948. The authors include a number of eminent Frenchmen, the economists Bettleheim and Fourastie among them, and their foriegn counterparts, the latter including the late Harold J. Laski and Everett Hughes of the University of Chicago. *The Managerial Revolution* is, however, only the point of departure of some of the lectures; for instance, Henri Lefèbvre's "Les Conditions Sociales de L'Industrialisation" is more concerned with the social implications of Burnham's thesis. The review singles out for comment two of these lectures. Bettelheim's lecture makes a strong attack on the assertion that "managers" are observable as a distinct social class, and his argument is cogent and forceful. Georges Friedmann, in *Les Technocrates et la Civilisation Technicienne*, reminds us that Augustin Cournot was more than a pioneer among mathematical economists but also an acute observer of social trends and the originator of a theory of economic and political change which, M. Friedmann maintains, is as comprehensive as that of Marx. As is inevitable in this kind of publication, there is a fair amount of repetition in the content of the lectures. This is more than compensated for by the continuity preserved in the work by the intervening discussion between the individual papers to which not only the authors themselves but also other French economists and sociologists contribute.]

JAMES (É.). Histoire des théories économiques. Paris: Flammarion, 1950. 7½″. Pp. 327. 450 fr.

[To be reviewed.]

Lasserre (G.). Socialiser dans la Liberté. Paris : Albin Michel, 1949. 8". Pp. 314. 390 fr.

[The study of the twilight of Capitalism seems to have a particular fascination for the French economist. It is unusual if a book on current economic problems does not begin with some sort of broad survey of the failures of free enterprise; and M. Lasserre begins this book in the traditional manner. It would be unfair to compare this part of his book (the first eighty pages) with, say, the work of Henri See of Pirou, for no more than a sketch is given of the details of downfall. Nevertheless, we hear too much of the malpractice of the capitalist profiteer and too little of the stupidity of the practising politician. In discussing the questions of the hour, the author's argument might be that socialism has displaced but hardly replaced capitalism. There is nothing unfamiliar in this central theme, and the variations on it amount to commentary on a wide range of separate topics. Some of the incidental discussion of French post-war experience is bound to interest the British reader, in particular when it turns to nationalisation problems. The last chapter of the book reminds us once again of the emotional power of the French language and of the inimitable faculty of their social scientists of being able to discuss technical problems and " la mystique de la vie humaine " in the same breath without giving the impression of incongruity.]

Renouard (Y.). Les Hommes d'Affaires italiens du moyen age. Paris : Armand Colin, 1949. 9". Pp. ix + 262. 480 frs.

[The book combines a literary study of the Italian mercantores of the Middle Ages with an economic history of the Mediterranean. While a good deal of attention is paid to the growth of the various commercial dynasties of the Italian ports, M. Renouard also draws some interesting general conclusions about the cultural influence of the precursors of modern Capitalism.]

Saint-Germain (J.). Les Financiers sous, Louis XIV. Paul Poisson de Bouvalais. Paris : Librairie Plon, 1950. 8". Pp. 290.

[The financial intrigues perpetrated by the ministers of Louis XIV and their sycophants has always been a popular subject among historians. M. Saint-Germain has produced evidence to show that in the latter half of Louis's reign the activities of the comparatively little-known de Bourvalais were of some significance. The documentation of this work may interest the economic historian and there is quite an extensive bibliography provided.]

Belgian.

Jacquemyns (G.). Opinions des Belges au sujet des tramways, du Congo, du Pacte Atlantique. Les prévisions électorales Gallup. Brussels : Institut Universitaire d'Information Sociale et Économique, 1949. 9". Pp. 38.

[The results of polls on the subjects of the replacement of trams by buses, the interest of Belgians in their colonies and the Atlantic Pact.]

German.

Baade (F.). Kieler Studien No. 1. Der europäische Longterm-Plan und die amerikanische Politik. Kiel : Instituts für Weltwirtschaft an der Universität Kiel, 1949. 8". Pp. 16.

[The author is the new Director of the famous " Institute " in Kiel. The booklet is the text of an address delivered to the Association of German Research Institutes in September 1949. After stressing the degree of economic integration reached in Europe before the Second World War and now lost, and illustrating the advantages of such integration by reference to the United States economy, the author proceeds to describe Western Germany as the indispensable factor in a new Western European integration. He describes Western Germany as " an artificial second England " without the possibilities of economic planning within the sterling area open to England. In his view, Western Germany can be made viable only by following the same principles of free trade which served England so well in the middle of the nineteenth century.]

Brinkmann (C.). Friedrich List. Berlin: Duncker & Humblot, 1949. 9″. Pp. 359. DM 16.

[To be reviewed.]

Egner (E.). Wirtschaftliche Raumordnung in der industriellen Welt. Bremen-Horn: Walter Dorn, 1950. 8″. Pp. 118. DM 4.

[To be reviewed.]

Gatz (W.). Kieler Studien No. 2. Zahlungsbilanzprobleme der Nachkriegswirtschaft Grossbritanniens. Kiel: Institute für Weltwirtschaft an der Universität Kiel, 1949. 8″. Pp. 47.

[A detailed statistical analysis of the British balance-of-payments position up to June 1949. The loss of overseas investments, deterioration in terms of trade, dollar deficit and sterling balances are all duly stressed and analysed in turn. In connection with the devaluation of September 1949, the author makes the interesting point that its main advantage may lie in a stimulation of private United States investments in the sterling area.]

Gross (H.). Facts and Figures relating to the Disintegration of the I.G. Farbenindustrie Aktiengesellschaft. Kiel: Institut für Weltwirtschaft, 1949. 11½″. Pp. 12.

[This represents an attempt to estimate the annual turnover and manpower of the units into which I. G. Farben may be broken up, in pursuance of the policy of the prevention of undue concentration of economic power. The estimates for such units are then compared with those of I.G. Farben itself for 1938 and 1943 and with such comparable figures as could be obtained for similar units in other countries. The implication is that German units that would be consequent on any greater break-up than into three main groups would be too small to compete effectively in world markets. Since competitive power does not depend only on total turnover or manpower, but rather on the scale of activity in particular branches and products, it is not wholly clear that the author's contention is really proved.]

Mackenroth (G.). Methodenlehre der Statistik. Göttingen: Vandenhoeck & Ruprecht, 1949. 9½″. Pp. 210.

[To be reviewed.]

Neuling (W.). Neue deutsche Agrarpolitik. Tübingen: J. C. B. Mohr, 1949. 9″. Pp. vi + 250.

[The author, Professor of Economics in the University of Hamburg, has sought to outline the conditions relevant to the discussion of a post-war agricultural policy for Germany. Although this is the main purpose of the book, over half of it analyses the development of German agriculture over the last eighty years, and there is a long discussion of agricultural policy from the days of Bismarck. In a sense, this is the most valuable part of the book. There is, for instance, a useful factual survey of the Nazi attempt at agricultural autarky which reveals some interesting statistics regarding war production, although one misses any systematic account of the structure of agricultural planning. The final chapters of the book concerning appropriate post-war policy familiarise us with contemporary discussion in Germany regarding the reconciliation of the maintenance of agricultural productivity with the desire for a reduction in the size of the agricultural holding for social reasons. Thus Professor Neuling, for instance, is sceptical of the economic wisdom of the " Bodenreform " in Eastern Germany. Sharing the reawakened interest in the works of v. Thünen, the author outlines a " Thünen-Plan " for German agricultural recovery, but in the reviewer's opinion these proposals are probably of more interest to the agronomist than the economist, and their fulfilment depends upon the institution of a united Germany.]

Pirath (C.). Die Grundlagen der Verkehrswirtschaft. Berlin: Springer, 1949. 10″. Pp. iv + 316. DM 36.

[To be reviewed.]

Radbruch (A.). Langfristige Auslandskredite. Ein Beitrag zur Problematik der internationalen Kapitalbewegungen. Tübingen: J. C. B. Mohr, 1949. 9½″. Pp. 224.

[To be reviewed.]

Rugina (A.). Geldtypen und Geldordnungen. Stuttgart: Kolhhammer, 1949. Pp. 352. DM 18.

[In a thorough, well-documented and very scholarly investigation into "*Geldtypen und Geldordnungen*" Dr. A. Rugina sets out to develop a system that he calls a "natural order of money," and he maintains that without such a system the classical economic laws could not function. It remains an open question, whether economic laws, constituting firm bases upon which economic policies could be fixed, do really exist. However that may be, Dr. Rugina's bold attempt is doomed to failure, because, unfortunately, the circle which he tries to square, cannot be squared. There will hardly be any disagreement about Dr. Rugina's differentiation between "natural" and "artificial" money, although experience with "artificial" money—especially as far as paper-money is concerned—does not strengthen the belief in the theories of the "Nominalists," who stick to the equation "money is money" irrespective of whether "natural" or "artificial." Yet the author's assertion that the functions of "natural" money as capital, savings or legal tender are only secondary, deriving from "natural" money's primary functions as a general circulating medium and a common denominator, are highly controversial. History seems to prove that it is the other way round. As this is the centre of Dr. Rugina's theories, the conclusions at which he arrives are not too convincing. A pragmatic rather than a theoretical approach to the complexity of monetary and currency problems is probably the only one which is likely to lead to a satisfactory solution. Despite his tremendous wealth of knowledge and his strictly logical method of thinking, Dr. Rugina is apparently unaware that even a monetary master-plan could not work "according to plan" unless it enjoys the nation's unshakeable confidence, which in its turn depends primarily on political, moral and social ethics rather than on economic doctrines.]

Italian.

Bernardino (A.). L'opera di Luigi Einaudi. Saggio bibliografico. Padua: Cedam, 1950. Pp. xvi + 174. 950 l.

[This bibliography of the writings of Prof. Einaudi has been compiled by one of his pupils, and is published under the auspices of the Università Bocconi of Milan. It extends over the whole period of his scientific activity from 1894 to his election as President of the Italian Republic in 1948. This is an impressive record which ranges over an immense variety of subjects. Hundreds of items are listed, including separate volumes (of these eight are recorded in the section on Public Finance alone), articles in periodicals and reviews; however, articles in the daily Press (to which he was a regular contributor for many years up to the advent of Fascism) are excluded, as are also his Italian correspondences to the London *Economist*. Besides, he was Editor of the *Riforma Sociale* (the economic bi-monthly review which rivalled and often excelled the *Giornale degli Economisti*, from which it was distinguished by its more historical and realistic approach) from 1903 till its suppression in 1935; subsequently he founded the *Rivista di Storia Economica*. The compiler contributes a short biography and an Introduction in which he outlines Professor Einaudi's contributions in the fields of both theory and history and sketches his work and influence as a teacher.]

Einaudi (L.). Scienza economica ed economisti nel momento presente. Turin: G. Giappichelli, 1950. 10″. Pp. 37.

[This is a farewell lecture, delivered on November 5, 1949, by the President of the Italian Republic before the University of Turin in which he himself, over a period of nearly sixty years, had been successively student and professor. He reviews the contrasts between the economics of his youth and that of to-day. In his youth the conflicts between schools of economic thought were sharp. To-day he sees no such acute divisions. Schools of thought differ in name rather than in substance and in method rather than in matter. All this is done with all the grace and authority that are commanded by a philosopher who has become the head of his State.]

D'Elia (E.). Su alcuni metodi di calcolo della media aritmetica e della concentrazione nelle distribuzioni multiple di frequenza. Rome: Società Italiana di Demografia e Statistica, 1949. 9½″. Pp. 30. 300 l.

[This discussion of various methods of measuring concentration forms No. 3 in the series of monographs published by the Italian Society of Demography and Statistics.]

Indici e dati relativi ad investimenti in titoli quotati nelle borse italiane (1928–1949). Milan: Banca di Credito Finanziario "Mediobanca," 1949. 9½". Pp. 129.

[This publication measures, company by company, the total stock-exchange valuation of its outstanding capital issues in each year since 1928, taking account of all issues of new shares, whether as bonus or at market prices. The purpose is to show how the investor has fared in each individual case through all the vicissitudes of depression, war and inflation. It is prepared by the staff of Mediobanca and includes headings and notes in English as well as other languages.]

Le recenti svalutazioni monetarie e il commercio con l'estero dell'Italia. Genoa: Istituto di Economia Internazionale, 1949. 9½". Pp. 91. 500 l.

[A study of the effects of recent currency devaluations upon the foreign trade of Italy, edited by Prof. Travaglini and prepared for the Chamber of Commerce of Genoa.]

PALOMBA (G.). Introduzione all'economica. Naples: Pellerano del Gaudio, 1950. 8½". Pp. xv + 340. 2300 l.

[The author, who is a member of the Faculty of Economics and Commerce in Naples, here attempts a new synthesis of his thought which hitherto had appeared in scattered monographs and lectures. He begins with the problems of economic progress, and compares progress from the medieval through the mercantilist economy of the renaissance with progress under the present individualist forms and that likely to be achieved in future under the collectivist regimes which he forecasts. He ends with a group of chapters on the economy of the firm in which he sketches the mathematical theories of the subject. He hopes this introduction will open up a new field of research in which economists, accountants and mathematicians can collaborate.]

PAPI (G. U.). Préliminaires à l'étude des plans pour l'après-guerre. Rome: Institut International d'Agriculture, 1948. 9½". Pp. xv + 306.

[This is the French translation made in 1948 of the second Italian edition of Professor Papi's analysis of the various post-war plans prepared in his own country and elsewhere. It is a great pity that this French edition should have appeared so late in the day, for the eight essays contained in it say much about fiscal and monetary theory and practice that was of contemporary importance in the immediate post-war period. In this country, as well as in France and Italy, we have learned the importance of Professor Papi's distinction between "specific" inflation—a consequence of credit creation—and "generic" inflation—a consequence of "induced" changes such as wages pressure. His discussion of underconsumption and under-employment might appear to be rather unbalanced and rather out-of-date, as instanced by his examination of money subsidies to the unemployed as a cure for depressions. As one would expect, the sections on taxation policy are competently written. An English version of this pamphlet was noted in the ECONOMIC JOURNAL for June 1947.]

VINCI (FELICE). Breve introduzione all'economia. Second edition. Bologna: Cesare Zuffi, 1949. 9½". Pp. 89. 550 l.

[A shortened introduction to economics which approaches the subject from the angle of national income, national accounting and income flows.]

Dutch.

ELSAS (M. J.). Umriss einer Geschichte der Preisse und Löhne in Deutschland. Vol. 2 b. Leiden: A. W. Sijthoff's Uitgeversmij, 1950. 10½". Pp. vii + 138. Cloth fl. 12,50; paper fl. 10.

[To be reviewed.]

Report of the President of the Java Bank. Batavia: G. Kolff, 1949. 9½".

[This contains a useful record of economic progress and difficulties in Indonesia.]

Verdoorn (P. J.). Grondslagen en Techniek van de Marktanalyse. Leiden: Stenfer Kroese, 1950. 9″. Pp. xi + 667.

[To be reviewed.]

Vleeschhouwer (J. E.). Economische Rekenvormen, Vols. I and II. 's-Gravenhage: Martinus Nijhoff, 1949. 9½″. Pp. 253 and xxviii + 316. Paper Gld. 19.80; Cloth Gld. 24.50.

[To be reviewed.]

Swiss.

Ammann (H.). Die Frage der Bevorzugung der Konsumenten-Genossenschaften in der Besteuerung. Berne: Francke, 1949. 9½″. Pp. 98. S. fr. 7.

[The descriptive part of this book is confined to Switzerland, but the general analysis (filling the last two-thirds of the book) is of general interest, since the problems connected with the alleged preferential fiscal treatment of co-operatives are roughly similar to those encountered elsewhere. The inquiry brings out the complexities of the subject and the difficulties of a "fair" fiscal treatment of consumers' co-operatives. It is found that in some respects they do enjoy preferential treatment under Swiss laws.]

Billeter (E. P.). Über die Messung der Einkommens-Konzentration. Berne: Francke, 1949. 9″. Pp. 134. S. fr. 18.

[In this study the new measures of inequality of income distribution worked out by Gini are applied to Basle income-tax data extending from 1888 to 1942. The chief results are (1) that the inequality of income distribution has diminished over the period, and (2) that the short-run changes are mainly due to the variations of the incomes in the highest bracket. The study contains a large number of detailed statistical analysis and methodical appendices.]

Frey (A.). Gewerbeverband und Gewerbepolitik im Kanton Basel-Stadt seit 1918. Berne: Francke, 1949. 9″. Pp. 223. S. fr. 18.

[This book contains a history of the activities of the association representing small business—artisans, retailers, etc.—in Basle since 1918. The first part is descriptive, the second analyses such policies as regulation of competition in retail trade, excess capacity in retail trade, credit for small business, bidding for contracts by small builders, etc. The author defends the practice of "collective bidding" against the charge of being equivalent to a cartel and monopoly price by pointing to the limitations of the concept of "free competition" when applied to small urban artisans and craftsmen. He pleads for an extension of standardised accounting techniques in this field as an alternative to price control. The final verdict on these associations is that they have played a valuable and indispensable part.]

Hunold (A.). Die Schweizerischen Effektenbörsen. Zurich: Verlag des Schweizerischen Kaufmannischen Vereins, 1949. 8½″. Pp. xi + 191. S. fr. 11.

[The author was for many years Secretary of the Zurich Stock Exchange, and thus well placed for writing this standard work on Swiss Stock Exchange organisation. The book contains interesting material on Stock Exchange restrictions imposed in Switzerland during the last war (pp. 121–53). The purpose of the book is to dispel some misconceptions which exist—even in Switzerland—on the economic effects of Stock Exchange "speculation." The author is not very hopeful on future Stock Exchange prospects, in view of declining willingness to take risks and the increasing development towards a "welfare state." A special chapter—contributed by Dr. Bieri—contains an application of a simple demand-and-supply analysis to the explanation of Stock Exchange quotations.]

Lehmann (Sylvia). Grundzüge der schweizerischen Auswanderungspolitik. Berne: Franck, 1949. 9½″. Pp. 160. S. fr. 16.

[A book which is interesting both for its general survey of economic effects of emigration as treated in previous literature as well as for the application of these theories to the specific case of Switzerland. The general policy recommended for Switzerland is to encourage the emigration of qualified technicians and to maintain close links with Swiss Colonies abroad so as to utilise them for purposes of trade promotion.]

Leutenegger (X.). Betriebswirtschaftliche und steuerliche Bewertung industrieller Liegenschaften. Berne: Francke, 1949. 8″. Pp. 126. S. fr. 9.50.

[The first half of this book deals generally with problems of valuation and depreciation of assets in company balance sheets. The stress is throughout on the accounting problems involved rather than on the fiscal problems. In the second half, the results are applied to the specific cases of industrially used land, factory buildings, office buildings and workers' houses owned by companies. The author inevitably finds a gulf between theoretical accounting requirements and company practice, as well as between company practice and fiscal regulations.]

Schneider (K.). Die Entwicklung der äusseren Kaufkraft des Frankens in den Jahren 1925–1938, unter besonderer Berücksichtigung der Verhältnisse zu Grossbritannien und den Vereinigten Staaten. Berne: Francke, 1949. 9½″. Pp. xiv + 133. S. fr. 14.40.

[To be reviewed.]

Stalder (A.). Au-delà du capitalisme, du collectivisme et du dirigisme. Lausanne: Imprimeries Populaires, 1950. 9″. Pp. 336.

[To be reviewed.]

Waldner (K.). Die Schlichtung von kollektiven Arbeitsstreitigkeiten in der Schweiz. Berne: Francke, 1949. 9″. Pp. xi + 215. S. fr. 15.

[This book deals with the development of public (cantonal) arbitration and mediation in labour disputes, covering the period up to 1943. It fills a gap since the latest description previously available was published in 1925. The voluntary nature of the Swiss arrangements is stressed, with the cantons merely acting as "honest brokers" bringing the two sides together. The author pleads for the supplementation of the present voluntary system by last-resort compulsory powers, in order to enable the state authorities to implement its employment and other economic policies.]

Danish.

Schneider (E.). Investering og Rente. Copenhagen: Nyt Nordisk Forlag, Arnold Busck, 1944. 10″. Pp. 147.

[This book is on investment calculations, what the Germans call "Wirtschaftlichkeitsrechnung," and the analysis centres round the concepts of Capital Value and Internal Rate of Return. Chapter I defines them, and Chapter II applies them to the problem of choosing the most advantageous of alternative investment projects. Chapter III discusses various important applications, in particular the problem of the economic life of equipment. The final chapter mentions the complications of reality (uncertainty and non-pecuniary considerations) and an Appendix explains the mathematical tools used. The book, which is intended for engineers as much as economists, is written with extreme lucidity and is probably one of the best treatments of the subject available.]

Sveistrup (P. P.). Economic Principles of the Greenland Administration before 1947. Copenhagen: C. A. Reitzels, 1949. 11″. Pp. 215. Kr. 18.50.

[A study of the Danish administration of Greenland.]

Swedish.

Vasa (F. G.) and **Heckscher** (E. F.). Sveriges Ekonomiska Historia. 2 vols. and diagrams and charts. Stockholm: Albert Bonniers, 1949. 10½″. Pp. 894 + lxi + 58 + 46.

[To be reviewed.]

Spanish.

Torres (M. de). Teoría de la Política Social. Madrid: Aguilar, 8½″. Pp. xxiv + 314. 65 ptas.

[To be reviewed.]

Czechoslovakia.

The Czechoslovak Economic Five-Year Plan. Prague: Czechoslovak Ministry of Information and Public Culture, 1949. 8″. Pp. 66.

[The text of the Five Year Plan Act with the speech of the Prime Minister —Mr. Zápotocký—in presenting it.]

Official.

British.

The Australian Potato Industry. Canberra: Bureau of Agricultural Economics, 1949. 8½″. Pp. 67.

[A very thorough study by the Commonwealth Bureau of Agricultural Economics which deals with all aspects of production, area of production and their trends, consumption with long- and short-term trends, transport, marketing and control, the experiences of other countries in this field, foreign trade, costs, mechanisation. It then goes on to a very thorough survey of the outlook for the future. It contains a large amount of useful statistical material.]

Directorate of Economics and Statistics, Ministry of Agriculture. Delhi: 1949:

Abstract of Agricultural Statistics of India, 1936–37 to 1945–46. 9½″. Pp. xx + 533.

Co-operative Farming. 10″. Pp. 31. 1*s.*

Crop Calendar. 11″. Pp. 55.

Estimates of Area and Yield of Principal Crops in Undivided India, 1936–37 to 1945–46. Pp. 88. 5*s.* 6*d.*

Indian Agricultural Statistics, Summary Tables for Provinces 1944–45 to 1946–47. 13″. Pp. 19.

Indian Coffee Statistics 1941–42 and 1942–43. 9½″. Pp. 13. 1*s.* 9*d.*

Indian Food Statistics. 10″. Pp. xi + 115.

India's Forest and the War. 13″. Pp. 111. 5*s.* 6*d.*

Jute Statistics. 10″. Pp. 21.

Matches. Investigation into an Alleged Combine in the Manufacture, Distribution and Sale of Matches. Ottawa: Department of Justice, 1949. 9½″. Pp. 134. 25 cents.

[A detailed and very fully documented investigation by the Commissioner under the Combines Investigation Act into an alleged combine in the manufacture, distribution and sale of matches in Canada.]

Nanjundan (S.). Indians in Malayan Economy. Delhi: Manager of Publications, 1950. 9½″. Pp. 57. 2*s.* 9*d.*

[This study was prepared by Mr. S. Nanjundan of the Office of the Economic Adviser to the Government of India. It deals with the basic features of the Malayan economy, the effect and reasons of Indian emigration to Malaya, its various stages, the volume of Indian investment in Malaya, followed by the author's conclusions based on the survey. Before the war there were some 750,000 Indians in Malaya. Recently their numbers have dropped to about 600,000. Most of them are labourers in the rubber plantations, where their average stay was about three years. But their life and security has been greatly affected by depressions as well as war. It is suggested that some combination of subsistence farming with work on the estates would improve security. Before the war, Indians were practically unorganised. Recently there has been a rapid growth of unionism and collective agreements are now negotiated.]

Note and the Explanatory Memorandum on the Budget for 1359 F. Hyderabad-Deccan: Government Press, 1949. 13″. Pp. xii + 64.

[This includes a great deal of statistical material dealing with the State of Hyderabad.]

Pakistan. Report to the Food and Agriculture Organisation of the United Nations. Karachi: Ministry of Food, Agriculture and Health, 1949. 8½″. Pp. 32.

[A report on the general economic position of Pakistan and on its resources for agriculture, forestry and fisheries, prepared for F.A.O. It contains useful statistical and factual information, especially with regard to food and population problems of the country.]

Queensland Year Book 1948. No. 9. Brisbane: Government Statistician's Office, 1949. 8½″. Pp. xi + 403. Cloth 3*s*. Paper 2*s*.

[A new edition of this now familiar and well-established yearbook. It has new material covering, amongst other things, the working of the new Wheat Stabilisation Plan and the industrial distribution of the Queensland working population at the time of the 1947 census.]

ROYAL COMMISSION ON POPULATION. Vol. III. Report on the Economics Committee. London: H.M. Stationery Office, 1950. 9½″. Pp. 64. 1*s*. 6*d*.

[To be reviewed.]

Statistical Handbook of the Sheep and Wool Industry. Canberra: Bureau of Agricultural Economics, Department of Commerce and Agriculture, 1949. 13″. Pp. viii + 105.

[A full statistical record of the production and marketing of wool in Australia.]

TITMUSS (R. M.). Problems of Social Policy. History of the Second World War United Kingdom Civil Series, Edited by W. K. Hancock. London: H.M. Stationery Office and Longmans, Green, 1950. 9½″. Pp. xi + 596. 25*s*.

[To be reviewed.]

UNION OF SOUTH AFRICA. Social and Economic Planning Council. Fourth Annual Report for the Year ended 30th September, 1948. Pretoria: Government Printer, 1949. 9½″. Pp. 22. 3*s*.

[A record of the recent activities of the Social and Economic Planning Council of the Union of South Africa, to which is appended a short factual and statistical survey of South African economic conditions during the last quarter of 1947 and the first three quarters of 1948.]

UNION OF SOUTH AFRICA. Third Annual Report of the Registrar of Banks for the Period ended 31st December, 1948. Pretoria: Government Printer, 1949. 13″. Pp. 41. 5*s*. 9*d*.

[A statistical summary of the assets and liabilities of commercial banks and certain other banking institutions in the Union of South Africa, preceded by a short survey of legislation and rulings which affect banks registered in the Union.]

AMERICAN.

1949 Survey of Consumer Finances. Washington, D.C.: Board of Governors of the Federal Reserve System, 1949. 10″. Pp. 124.

[This survey of Consumer Finances, prepared by a group in the University of Michigan, reprints eight articles that have appeared in the *Federal Reserve Bulletin*. They cover such questions as consumer incomes, expenditures on durables, ownership and use of liquid assets, expenditure on housing and housebuilding, on automobiles, and finally saving and purchase of stock and bonds.]

United States Department of Commerce. The Balance of International Payments of the United States, 1946–1948. United States: Government Printing Office, 1950. 9″. Pp. viii + 275. 55 cents.

[This is a very useful statistical and factual account of all the many components of the U.S. balance of payments over the years 1946, 1947 and 1948. It discusses in considerable detail the amounts of imports from Europe and other areas under each main head and analyses the reason for increases or decreases and the relations of import to domestic output and consumption. It is to be regretted that little attempt is made to measure, by revaluation, the changes in volumes as distinct from values, or to compare volumes so calculated with pre-war volumes. One section attempts to relate the totals of imports, in broad categories and for continents, for the years since 1939 to hypothetical total imports calculated from the relation of imports to the gross national products over the years 1921–38. This shows, as was to be expected, a very considerable deficiency of present imports. It is a pity that the report does not go on to discuss more fully the underlying factors and the significance and permanence of structural changes in the U.S. economy in so far as they affect imports.]

South American.

Memoria anual. Décimocuarto ejercicio, 1948. Buenos Aires: Ministerio de Finanzas de la Nación, Banco Central de la Republica Argentina, 1949. 9½″. Pp. 98.

[The fourteenth annual report of the Central Bank of the Argentine Republic. It includes information concerning the Argentine economy in 1948; the balance of payments and the exchange system; foreign trade; bank credits and operations; the relation of the Central Bank to the other banks; and the stock market.]

Ministerio de Agricultura y Ganadería. Conservación de Granos y Almacenamiento en Silos Subterráneos. Buenos Aires: Dirección General de Fomento Agricola, 1949. 10″. Pp. 222.

[A report prepared by the Director General of Agricultural Development of the Ministry of Agriculture and Livestock. It describes the experimental work which has been undertaken since 1941 on the conservation and storage of grain in subterranean silos.]

Ministerio de Agricultura y Ganadería. Razas Lecheras y Selección Racional. By R. Giorello. Buenos Aires: Dirección de Informaciones, 1950. 9″. Pp. 72.

[This small pamphlet on the selection of dairy cattle is the first of a series which the information department of the Argentine Ministry of Agriculture and Livestock is planning to publish on many different aspects of dairy farming.]

Programa para la estimación del Ingreso Nacional de Colombia. Bogotá, Columbia: Grupo del Ingreso Nacional, 1949. 12½″. Pp. 61.

[A mimeographed copy of a plan for estimating the national income of Columbia, prepared by the National Income Group of the Bank of the Columbian Republic.]

Dutch.

Polak (F. L.). De Problematiek der Welvaartsplanning en haar Ontwikkeling in de buitenlandse Litteratuur. The Hague: Centraal Planbureau, 1949. 9½″. Pp. 62.

[A study of the development of thought about the planned economy, mainly in England and America.]

Tinbergen (J.). Government Budget and Central Economic Plan. The Hague: Central Planning Bureau, 1949. 9½″. Pp. 11.

[A short summary in English and French of the main features, techniques and interrelations of the economic plan and the budget in the Netherlands.]

TINBERGEN (J.). Welke mogelijkheden en middelen bestaan er tot het in evenwicht brengen van de betalingsbalans van Nederland na afloop van de Marshall-hulp onder gelijktijdig streven naar een overwegend vrijer internationaal handelsen betalingsverkeer? The Hague: Central Planbureau, 1949. 9½″. Pp. 53.

[An interesting and authoritative study of the trade and balance-of-payments problems of the Netherlands.]

STUIJVENBERG (J. H. VAN) (Ed.). Het Centraal Bureau een Coöperatief Krachtveld in de Nederlandse Landbouw, 1899–1946, Rotterdam: Central Bureau, 1949. 10½″. Pp. xxxvi + 520.

[This is a history, sponsored by the Netherlands Economic Institute, of the Central Purchasing Agency of the Dutch agricultural co-operative movement. In the 1880s co-operation was the Dutch farmers' answer to the dislocation caused by cheap American grain imports. One of the principal activities of co-operatives was bulk purchasing, for which the "Centraal Bureau" was founded in 1899. Against severe foreign and home competition on the unprotected Dutch market it captured a strong position in such trades (all described in detail) as fertilisers, fodder, coal, seeds, insecticides, etc., and farm implements. Its objectives were better quality and lower prices, which were attained by reviving competition in these markets. In 1938 69% of Dutch farmers were members of purchasing co-operatives; in that year the "Centraal Bureau" also took up selling, especially of grain and potatoes. Because of its broad scope and the importance of its subject, this volume is a valuable contribution to the recent history of Dutch farming.]

LUXEMBOURGIAN.

Statistiques économiques luxembourgeoises, résumé retrospectif, August 1949. Service d'Études et de Documentation Économiques. Luxembourg: Ministère des Affaires Économiques, 1949. 11½″. Pp. xv + 311.

[This handsome volume, which in format and printing types shows its affinity to the publications of the United Nations and our own Digests and Abstracts, presents the main statistics of Luxembourg. Wherever possible—and that is in most cases—it gives a long run of figures, going back to the last century in many instances, and usually to the early 1920s. It covers all the main fields of economic activity.]

HUNGARIAN.

László Rajk and his Accomplices before the People's Court. Budapest, 1949. 8″. Pp. 319.

[A *procès verbal*, issued from the State Prosecutor's Office, Budapest, of the trial before the People's Court of Lázló Rajk and others for attempts to overthrow the democratic order of Hungary and other crimes.]

R. Vogeler, E. Sanders and their Accomplices before the Criminal Court. Budapest: Hungarian State Publishing House, 1950. 8″. Pp. 309.

[This is the official record, published from the Office of the State Prosecutor in Budapest, of the trial of Imre Geiger and associates, charged with espionage and other crimes.]

International.

International Bank for Reconstruction and Development. Fourth Annual Report, 1948–1949. Washington D.C.: International Bank, 1949. 11″. Pp. 56.

[This annual report includes sections discussing the rôle of the Bank, the nature and practical problems of economic development, the European Recovery Programme and the loan activities and other operations of the Bank during the past year.]

International Labour Office. Wages and Payroll Statistics. Geneva and London: International Labour Office, 1949. 9½″. Pp. 176. 5*s*.

[A report prepared for the Seventh International Conference of Labour Statisticians held in September 1949. It is principally concerned with the problems of evolving statistics that are comparable as between different countries both in coverage and definition.]

Year Book of Labour Statistics, 1947–48. Tenth Issue. Geneva and London: International Labour Office, 1949. 12″. Pp. xv + 303. 15*s*.

[This tenth annual issue includes new tables on social security.]

United Nations. The Economic and Social Council. Reference Pamphlet No. 2. Lake Success: United Nations, 1949. 8″. Pp. iv + 100. 15 cents.

[An account of the structure and functions of the Economic and Social Council and of its work.]

Economic Survey of Latin America 1948. Lake Success: United Nations (London: H.M. Stationery Office), 1950. 9″. Pp. xx + 279. 15*s*.

[This regional survey was undertaken at the request of the Economic Commission for Latin America and is the first comprehensive review of the economic structure in that region issued by the secretariat of the Commission. It reviews trends in production, covering manufacturing, construction, mining and agriculture, the broad changes of populations, transport and trade and finally discusses the problems of balances of payments and the relations of Latin America to European recovery.]

The Effects of Taxation on Foreign Trade and Investment. Lake Success: United Nations (London: H.M. Stationery Office), 1950. 9″. Pp. 87. 3*s*. 9*d*.

[A study prepared for the Social and Economic Council of the United Nations by the Fiscal Division of the Department of Economic Affairs. It deals with the contributions of taxes on foreign trade and investment to government revenues, especially in under-developed countries, the importance of taxes in directing the flow of goods and capital, the various types of tax barriers and tax incentives in the foreign trade field, the effects of double taxation and the attempts to eliminate it.]

How the United Nations Began. Lake Success: United Nations, 1949. 7½″. Pp. 28. 15 cents.

[This is the first of a series of pamphlets on the United Nations and its Agencies for use in schools.]

The International Trusteeship System and the Trusteeship Council. Reference Pamphlet No. 3. Lake Success: United Nations, 1949. 7½″. Pp. iii + 59. 15 cents.

[A short and somewhat bald catalogue of the work and achievements of the Trusteeship System.]

Methods of Financing Economic Development in Under-developed Countries. Lake Success: United Nations (London: H.M. Stationery Office), 1949. 9″. Pp. 163. 9*s*.

[To be reviewed.]

Public Finance Information Papers. Egypt. Lake Success: United Nations, 1949. 10½". Pp. 31.

[This Information Paper is in a new series, following on the publication of Public Finance Data in 1948–49. Its purpose is to present the conditions of public finance in selected territories with due consideration to economic development programmes.]

Recent Developments in the World Economic Situation. Lake Success: United Nations (London: H.M. Stationery Office), 1949. 11". Pp. 48. 3*s.*

[This brings up to date the World Economic Report, 1948.]

Relative Prices of Exports and Imports of Under-developed Countries. Lake Success: United Nations, 1949. 9". Pp. 156. $1.00.

[To be reviewed.]

Review of International Commodity Problems 1949. Lake Success: United Nations (London: H.M. Stationery Office), 1950. 11". Pp. viii + 76. 4*s.* 6*d.*

[This third annual review deals first with the general problems that have arisen since the war: the restoration of production in areas of devastation; the overtaking of arrears of demand and of stock shortages; the effects of increased bilateral trading; the reduction in the field covered by international allocation. It goes on to the immediate current problems of international consultation and action: the wheat agreement; the tea agreement; the work of the Sugar Council, the Study Groups covering rubber, wool, tin; other more general activities of F.A.O., I.T.O. and the various United Nations Commissions. Finally, there is a valuable series of short surveys of the main commodities, with most of the essential statistics.]

Statistical Yearbook, 1948. First issue. Lake Success: United Nations (London: H.M. Stationery Office), 1949. 11½". Pp. 481. 40*s.*

[This is the first issue of a new United Nations *Statistical Yearbook* which will in future appear annually. It continues the work, and has a slightly broader coverage than the *Statistical Yearbook of the League of Nations* which ceased production in 1945.]

The Will to Co-operate. A discussion guide on the General Assembly. Lake Success: United Nations, 1949. 8". Pp. 29. 15 cents.

[Brief popular notes on the work of the General Assembly.]

World Fiber Review 1949. Washington D.C.: Food and Agriculture Organization of the United Nations, 1949. 11". Pp. 118. 50 cents.

[In 1948–49 the current supply of wool, jute and silk had again to be supplemented from stocks, but cotton production for the first time since the war exceeded consumption. The consumption of all fibres rose to 94% of the 1934–38 average, but the per head consumption remains about 15% below the level of the last pre-war season. This volume presents and analyses all the basic statistics for each of the principal fibres, and discusses the world trade and home consumption of textiles.]

World Statistical Congress. Proceedings of the International Statistical Conferences, Vol. II. Edited by W. J. Bruce. Lake Success: United Nations, 1949. 9½". Pp. 275.

[This contains the papers or addresses prepared for the World Statistical Congress convened at the suggestion of the Economic and Social Council and held in Washington during March 1947. There are some thirty papers in all, covering the statistical work of the United Nations, its specialised agencies, statistical developments in different countries (Mr. Stafford of the Board of Trade describes those in the United Kingdom), international comparability, the comparability of national income statistics and the special problems of demographic statistics.]

1948 Yearbook of Food and Agricultural Statistics. Vol. I, Production. Washington D.C.: Food and Agriculture Organization of the United Nations, 1949. 11″. Pp. xviii + 283. $3.50.

[This invaluable work, produced for F.A.O. presents tables of output of commodities on a comparable basis, building up to totals for continents and the world. A further series of tables shows the full agricultural activities and output of each nation in turn.]

UNITED NATIONS CONCILIATION COMMISSION FOR PALESTINE. Final Report of the United Nations Economic Survey Mission for the Middle East. Part I. The Final Report and Appendices. Pp. viii + 102. 7*s*. 6*d*. Part II. The Technical Supplement. Pp. vi + 74. 6*s*. Lake Success: United Nations, 1949. 11″.

[To be reviewed.]

THE ECONOMIC JOURNAL

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ECONOMIC PROGRESS, RETROSPECT AND PROSPECT[1]

THE economists of to-day are no less ready than their predecessors to proffer advice on the ordering of affairs. Indeed, if there are any among our administrators who think that this advice is important, they must be embarrassed at its profusion, and they may well feel every sympathy with the plight of the Confucian disciple of whom it was said : " When Tzu-lu heard any precept and was still trying unsuccessfully to put it into practice, his one fear was that he might hear some fresh precept." I shall not add to their embarrassment, for although what I have to say has some relation to economic policy, the precepts that I have to expound are mellow with great age.

The presumption that, once a country has transformed itself into a modern industrial society, its continued material progress is assured (in the absence of a political cataclysm) seems to have long survived the loss of belief in progress in general, and until recently it appeared to be undisturbed by all the disorders of our time. We might not be prepared to go quite so far as Mill who declared in 1848 :

> " Whatever may be the other changes which the economy of society is destined to undergo, there is one actually in progress concerning which there can be no dispute . . . there is at least one progressive moment which continues with little interruption from year to year and from generation to generation; a progress in wealth; an advance in what is called material prosperity." [2]

But it was at any rate possible for a distinguished authority in 1944, when a bleak view of our future might well have been held, to suggest, on the basis of certain assumptions which he presumably thought to be reasonable, that it would be possible for the British people in 1948 to consume 19% more goods and services than in 1938, to invest 25% more and to produce enough exports to pay for all the necessary imports.[3] In the event, things did not turn out quite so well; but the experience of this country in the decades before the war did not suggest that such a forecast was unduly optimistic. Economic statisticians have estimated that between 1880 and 1913 the real income of this country more than doubled and that average real wages rose by about two-fifths. Further, they tell us that, although this progress was interrupted by the First World War, by 1924 real income had almost recovered to its pre-war level, while real wages were about 12% higher. We look back on the inter-war period as one of economic distress. Yet the estimates are that between 1924 and 1938 aggregate real income rose by about a quarter, and average real wages by over a fifth.[1] All this confirms the common observation that we were a good deal better off on the eve of the Second World War than we had been before the First. To this progress many factors had contributed, including, of course, our more favourable terms of trade. But the main cause was the rise in industrial production, which was estimated at 84% between 1907 and 1937. This was equivalent to an increase in output per wage-earner of 47% and, since the length of the normal working week had been reduced during the period, to an increase in output per man-hour of 65%.[2] Most of this advance was achieved after 1924—in the years of industrial stagnation, so-called. As was suggested of another period that has a bad name in economic history, that from 1815 to 1850, the events which most impress themselves upon the attention of contemporaries are not always the most representative of the period.[3] Economic progress (in the sense of a rise in production and real income per head) may sometimes make less impression on opinion than the instability which attends the advance. It was, of course, the persistence of heavy unemployment that had given the inter-war years a bad name. Since, however, substantial progress had been made in spite of that unemployment, and since it was thought that we had discovered how to avoid it in the future, there appeared to be justification for the confident extrapolations of 1944.

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[1] Presidential address delivered to Section F of the British Association for the Advancement of Science on September 1, 1950, at Birmingham.

[2] J. S. Mill, *Principles of Political Economy* (Ed. Ashley), p. 696.

[3] Lord Beveridge, *Full Employment in a Free Society*, Appendix C. *See* also Lord Beveridge's *Pamphlet* summarising the content of his book, p. 46.

Yet many of the wise men of the past had, in the relatively favourable conditions of their own time, inclined to the view that material progress, like happiness, never continues long in one stay. The shadow of Malthus hovered over the economy of the early nineteenth century, and in the Victorian heyday Jevons had created some despondency by pointing to the probable effects of the disappearance of one of the main natural advantages upon which British industrial progress had depended. With the exhaustion of easily accessible coal " the cost of fuel must rise," he said, " perhaps within a life-time, to a rate injurious to our manufacturing and commercial supremacy, . . . and the check to our progress must become perceptible within a century." [1] Nearly fifty years later Marshall, after referring to the rise in real wages during his life-time " at a rate which [had] no parallel in the past and [might] probably have none in the future," expressed fears for what the coming years had in store for us—fears based largely on the probable worsening of our terms of trade with primary-producing countries. This was, he said in 1907, an " age of economic grace " which " may run out before the end of the century." [2]

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[1] These estimates were brought together in Professor Pigou's *Wage Statistics and Wage Policy*.

[2] Cf. L. Rostas, *Comparative Productivity in British and American Industry*, p. 49.

[3] W. W. Rostow, *British Economy of the Nineteenth Century*, p. 19.

Some of these misgivings have been justified, although not always in the way that their authors expected. It is true that the Malthusian devil appears finally to have left our shores for the more congenial demographic climate of Eastern Asia. But we no longer enjoy superiority in natural resources; the age of dear British coal has come, and we have fewer advantages than many other countries in access to supplies of alternative sources of power. As for the terms of trade, after two decades in which cheap imports had placed a cushion under our elbows, these have moved against us at a critical time, although of course it would be very rash to assume that the present relationship between the prices of primary and manufactured products will persist for a long time. These, however, have not been responsible for the most serious damage to the foundations upon which economic progress in the past was believed to rest. The breakdown in the system of multilateral trade, the disappearance of an international monetary standard, the abandonment of a freely working pricing system, the spread of monopoly both private and public, the establishment of burdensome taxation systems, all these would have seemed to the nineteenth-century observer to poison the springs of progress. Now it is believed that we can dispense with some of the props which our fathers thought to be essential to a progressive system; but many of them are still deemed to be necessary, and these it is the object of policy to set up again. At the end of the war, however, it would have been very optimistic to expect any quick success in reaching this result, and at the same time it was obvious that our own relative position in the world economy had gravely deteriorated. How is it then that our faith in the continued material progress of this country was so largely unimpaired? Our hopes for the future depended, I think, upon two factors, first, the continuance of those improvements in industrial technique and organisation which have been the chief proximate cause of economic progress so far and, second, the preservation of full employment for a long time ahead. There seemed no cause for doubting that applied science would continue to yield its fruits in higher production, and with full employment firmly within our grasp, there was no reason why we should throw away a large part of the benefit that technical progress made possible, as we had done between the wars. A state of full employment has been maintained since the war; but, in spite of that, our economic position has become precarious. It was natural, therefore, that increased attention should be focused on the former of the two factors on which our hopes rested, namely, technical progress and efficiency. This interest has been stimulated by numerous inquiries into our industries, inquiries which have brought to light serious deficiencies in some of them. These are now being underlined by the various Productivity Teams which are the fortunate beneficiaries of American instruction and American hospitality.

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[1] W. S. Jevons, *The Coal Question* (3rd edition), p. 274.

[2] A. C. Pigou, *Memorials of Alfred Marshall*, p. 326.

The conclusions that have been generally reached are that, while our industries made considerable technical advances between the wars, the advances were less rapid than those made by our competitors, and that if we are to balance our international accounts and even to maintain the present standard of living, massive improvements in technique and organisation are necessary throughout industry. One of the reasons for the backwardness of our older industries (so it is urged) is their unsatisfactory equipment. The higher capitalisation of American industry, the fact that the American worker in most trades is assisted by a greater amount of power machinery than the British, is held to be a major cause of the disparity in productivity between the two countries. The remedy, it seems, lies in heavier industrial investment. Now there is little doubt that differences in capitalisation correspond very closely to differences in productivity, both between countries and between periods. Economic progress, it has long been a truism to state, is closely correlated with the rise in capital per head. This, however, does not take us very far. Why do these differences exist? Why has Britain become inferior to some other countries in this important respect? Is it merely an injection of fresh capital into our industrial system that is required? These are fundamental questions which I should like to discuss.

In the first place, it seems to me that, in this diagnosis, attention has been confined to symptoms and that the deeper causes of economic disparities have been ignored. I am led to this view because I observe that for several of our industries in which comparisons of productivity are unfavourable to us, the cause, or part of it, is to be found elsewhere than in a disparate growth in capital investment. For example, the steep rise in output per man-shift in the German coal-mining industry during the thirties, a rise which left the Germans far ahead of the British in this respect, was not attributable mainly to the use of more mining equipment, for the mechanisation of German mining had been almost complete before 1930. The chief reason given for the advance was the better organisation of mining operations. It was not that the industry was provided with more resources, but rather that it made better use of those which it already possessed.[1] Again, the far higher productivity of the American building operative when compared with the British in the erection of roughly similar buildings does not depend on a much greater use of capital equipment. The chief causes are to be found, first in the method by which the Americans organise the whole complex of operations between the time when the contract is let and the time when the building owner takes possession, and, second, in the different attitude of the American operative towards his work.[2] Then, I am told of a company which operates almost identical plants in the United States and here and which gets substantially higher productivity from the American one. The recent experiments that have been made in the cotton industry show that large increases in productivity can be obtained without additional investment and merely by the re-organisation of the mills—the re-arrangement of the machines and the "re-deployment" of the workers.[3] These examples suggest that high productivity is often the result of the way in which the capital resources are used, and is not determined solely by the quantity of them. The key, in other words, is to be found in organisation.

Even when we compare industries where the capitalisation in

[1] Cf. Ministry of Fuel and Power, *Report of Technical Advisory Committee on Coal Mining* (Cmd. 6610), pp. 29 *et seq.*

[2] *Working Party Report on Building* (Ministry of Works), Chap. 18; and *Report of the Building Productivity Team.*

[3] See *Reports of the Cotton Manufacturing Commission* (Ministry of Labour).

America is much higher than it is here, and where the productivity appears to be closely correlated with the amount of capital used, the causes of the disparity remain more interesting than the fact. In some cases, failure in this country to adopt more capitalistic methods is apparently due to institutional arrangements. In the British cotton industry it is alleged that wage systems based on the conditions of the past and the objections to multiple-shift working have made the widespread use of more modern types of machines unprofitable. Sometimes the inferiority of our business organisers to the American has been given as an explanation. This is a point to which I shall return. There is, however, another type of argument which is more difficult to handle. Static analysis normally explains the differences in capitalisation and in organisation between countries in terms of the relative scarcities of the various factors of production. Where skilled labour is cheap and capital expensive, it is to be expected that firms will use less capitalistic methods than they do in countries where the reverse relationship applies. This may mean that the two countries in our comparison specialise on different qualities of the same good; the first is likely to concern itself with high qualities and specialities, and the latter with mass-produced goods. While this reasoning is satisfactory in explaining the contrast that exists at any moment, and while it also indicates that it would be dangerous for us to play the " sedulous ape " to the Americans, it does not justify complacency, for the argument scarcely touches the dynamics of the problem. No doubt one reason why the Americans in the middle of the nineteenth century were pioneers in the adoption of the " interchangeable method " of production in engineering, was that, in the absence of a large supply of skilled labour, they had perforce to seek for means of economising its use. This meant the standardisation of products and processes and the employment of highly mechanised methods of manufacture. Once these methods had come into use, however, a chain of consequences followed. The initial standardisation of components and, to some extent, of finished products also, was brought about by the lack of skilled labour. But standardised output influenced consumers' tastes in the direction of uniformity, and a uniform demand thus provided opportunities for mass-production methods. In a particular context, it can be seen how what might have been originally regarded as a deficiency was later put to glorious gain; for when the motor-car production began, the existence of parts-making industries accustomed to working on the " interchangeable principle " provided advantages to the American car manufacturers that were not present in this country. It was thus the enterprise of the Americans in overcoming an initial disadvantage which won for them benefits which time showed to be cumulative.

The conclusion is, then, that while material progress is affected by numerous circumstances, it is fertility in resource and imaginative enterprise which lie at its root. Where these qualities are present in a population and are given opportunities to exercise themselves, obstacles to progress are readily overcome. In the presence of enterprise, moreover, the capital needed for high productivity is seldom lacking. It is erroneous, in my view, to look to the side of savings for a leading cause of any deficiency in capital equipment, for enterprise generates its own savings out of the higher incomes which it makes possible. In the old civilisations of Asia, what has retarded economic progress is the lack of native entrepreneurial ability far more than a shortage of capital or skilled labour. As a result, in India and elsewhere, until very recently, the not inconsiderable savings of the wealthy have been used in the creation of consumers' capital or in loans for consumption purposes, and material progress was largely confined to those sectors of the economy in which foreign entrepreneurs participated.[1] In the one Asiatic country where entrepreneurial skill was available (Japan), industrial progress was remarkably rapid as soon as it was allowed freedom to exercise itself, in spite of the initial shortage of capital. I suggest, therefore, that the capitalisation of industry is a function of enterprise, and that the higher productivity which the extensive use of capital makes possible, depends ultimately on the supply of entrepreneurs.

This brings me to another stage in my argument. Economic efficiency refers not merely to the relation between input and output in particular industries. It has also to do with the way in which the whole resources of a community are distributed among the different uses to which they can be put. One reason why our income per head before the war was not far short of that of the United States, in spite of their superior productivity in manufacturing and mining industry, was that a larger proportion of our workers was found in those industries which in all countries have a relatively high productivity. This was the consequence of our having carried industrial specialisation to an extreme limit, with the result that in 1939 only 5% of our working population was engaged in agriculture (which in every country is a low-productivity industry) compared with 20% in the United States. This specialisation was one of the reasons for our great material progress in the past. At present, when the change in the conditions of international trade is forcing us at great cost to retrace our steps, we may wonder if this specialisation did not mean our giving too many hostages to fortune. Still, up to 1939, we reaped great advantages from it, and whether in the long run the policy will be counted wise may not be told until our story is finished.

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[1] Cf. Preparatory Asiatic Conference of the International Labour Organisation, *The Economic Background of Social Policy* (1947), pp. 3, 97, 100, 155.

The efficient distribution of resources is not a once-for-all operation. An economic system cannot progress unless, with the inevitable changes in circumstances, it alters that distribution. This is especially important for a country that has owed part of its material well-being to superiorities that time destroys, such as those that come from exhaustible natural resources, or to an early start. In this kind of adaptability Great Britain once showed great skill; but her achievements in this respect during the last thirty or forty years have not matched those of her past, nor indeed those of other countries. Our industrial weakness during the inter-war years was demonstrated far more by our failure to secure a substantial share of the new trades that rose during that time than it was by the probably inevitable decline of our older staple manufactures. Lack of resilience may be regarded as a serious cause of misgivings about the future, for economic progress is associated far more with a capacity to take the lead in new industries than it is with steady technical progress in the old. This is particularly true of a country that occupies a position like ours in the world. With our superiority in natural resources gone, and with the knowledge and experience of established industrial technique widely spread among the peoples, we can hope to maintain a high rate of progress only if we show imagination in scouring out new channels.

This brings me to the proposition which lies at the heart of my theme. It is that economic progress springs less from the detailed improvements effected in the methods of established industries than from massive innovations which lead to the creation of new ones. In other words, the rise in material wealth depends not so much upon steady progress in turning out familiar things (although, of course, that is important enough) as upon the discovery of new ways of producing those things and upon finding new things to produce. If this is true (and I believe that the history of any period in which there has been a striking advance in material wealth justifies this view), then it means that of all the forces that make material progress possible, industrial leadership is the most powerful. The key to progress is held by the man who is capable of effecting novel combinations of resources, often for the creation of fresh classes of goods. I do not think that anyone who studies the development of any economically progressive country over the last century can fail to agree about the major part that has been played by a comparatively small group of forceful pioneers. They have not always been entrepreneurs in the classical sense, that is to say, independent business men working with their own resources. Many of them have been salaried officials. What has distinguished them has been their capacity for imposing their authority on their organisation and of persuading others to entrust them with the resources necessary for new ventures. This type of man is the true entrepreneur, as distinct from the ordinary run of business man who treads the path beaten out for him. Professor Schumpeter has made us familiar with this distinction, which he used in expounding his theory of economic development; but other economists—as well as most business men themselves, no doubt—have observed it. Marshall, for example, drew a contrast between those business men who " have prospered by steady adherence to affairs, largely of a routine character; with but little use of the higher imagination . . .," and the leaders " on whose work the progress of industry most depends." [1] A recent investigator into business behaviour has laid emphasis on the special importance of the part played in industrial progress by the " surging energy of the founder-type of personality." [2]

In his rôle as the chief contributor to material progress, the industrial leader is not concerned merely with meeting existing demands by fresh combinations of resources. His equally important function is the creation of new demands.

> " Innovations in the economic system do not as a rule take place in such a way that, first, new wants arise spontaneously in consumers and then the productive apparatus swings round through their pressure. . . . It is the producer who as a rule initiates economic change and consumers are educated by him if necessary; they are, as it were, brought to want new things. . . ." [3]

Professor Knight has expressed the same idea :

> " It is common to think of the economic process as the production of goods for the satisfaction of wants. This view

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[1] *Memorials of Alfred Marshall*, pp. 331–2.

[2] P. W. S. Andrews, *Manufacturing Business*, p. 284.

[3] J. A. Schumpeter, *The Theory of Economic Development* (1934), p. 65.

> is deficient in two vital respects. In the first place, the economic process produces wants as well as goods to satisfy existing wants, and the amount of social energy directed to the former . . . is very large and constantly growing." [1]

A German student of industrial organisation is following the same line of thought when he states :

> " Industrial development is not merely the result of a passive adaptation to technical progress and market conditions. On the contrary, modern industry . . . actively influences markets . . . in order to mould them according to its requirements." [2]

Thus, although as Adam Smith said : " Consumption is the sole end and purpose of all production," large increases in consumption usually result from the initiative of producers who persuade people to want new things, and who themselves act as if production were the end of economic activity. According to this view then, the changes which contribute most to progress arise from impulse within industry rather than from impact upon it.

These industrial leaders set the pace in industry as a whole, for they draw after them the " routineers " whose old markets are destroyed or whose methods are rendered obsolete by innovations. Those who cannot follow fall out of the race. So it may be said of the true entrepreneurs as was said, in a more elevated context, of the greatest nation of innovators in history : " They were born into the world to take no rest themselves and to give none to others." Whether this striving for material progress is a good thing, whether Mill was right in looking forward wistfully to the coming of a stationary State, are questions that do not concern me here. All I need say is that however much the present generation is repelled by some of the manifestations of material progress, it seems firm in its belief that higher real incomes are among the most desirable benefits to which mankind can attain. Again, no one would deny that the process of creating new wants, or of diversifying existing wants, is attended at times by waste. But whether in such a society as our own we need to charge our bureaucrats with the responsibility of protecting us against that waste and of saving us from the possible social disaster of getting what the innovators and their publicity agents make us think we want is a question which, fortunately, lies beyond the scope of this paper. I steer my discourse warily away from these speculations towards a purely economic question upon which the argument may throw some light. Theoretical economic analysis commonly proceeds on the assumption that a business man, when acting rationally, enlarges his output to the point at which his net profits are maximised; but this assumption seems to be refuted by the common observation that the general run of business man is content to stop short of that point. His aim is rather to ensure to himself over a long period an income which enables him to maintain a customary standard. Now, in an unprogressive society, or even in a protected sector of a progressive society, he is no doubt able to follow this policy. But the intrusion of a few restless, ambitious and exceptionally capable innovators into the system forces the comfortable and the psychogically well adjusted out of their routine. They must become economic men or go under. The appetites which drive the innovators forward may, it is true, be quite other than the conscious desire to maximise profits; indeed, their motives are obscure. Yet since pecuniary gain provides a clear demonstration of their success, their activities are likely to produce a result in conformity with theoretical expectations in their own case, and the result for industry as a whole (or for that part of it that is being affected by their innovations) may not be very different from what it would be if the theorist's assumptions were correct.

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[1] F. H. Knight, *Risk, Uncertainty and Profit*, pp. 318–19.

[2] H. von Beckerath, *Modern Industrial Organisation*, p. 190.

This will be true, of course, only in a society in which the activities of innovators are not seriously impeded. Where law and public opinion are favourable to free enterprise, the routineers must adjust themselves to change or go out of business. But whenever defensive action by the routineers is possible, they will take it, as can be seen by many examples drawn from both before and since the "age of economic grace." If such defensive action is supported by the State, then a powerful brake may be imposed on material progress. The action may take forms familiar to us in our own day, restrictive practices of the kind associated with cartels and trusts, product differentiation and the like. The object of these practices is not usually the exploitation of the consumer in the crude sense, but rather the provision of insurance against a sudden change of circumstance. The practices may win considerable public sympathy, for although the results of economic change are welcomed, the change itself is disturbing. Yet a society where defensive action in support of threatened interests is generally successful is not a society that can expect great advances in material well-being. It may, therefore, be a true instinct among the Americans, who of all people are still the most avid of material progress, to see in cartels and monopolies the canker at the heart of the economic system.

If they are right, it is not mainly for the reasons given by static economic analysis. Economists usually object to departures from their ideal competitive system on the ground that imperfect competition and monopoly lead to higher prices, lower output and less employment than would exist if industries were conducted under conditions of perfect competition. Apart from the fact that perfect competition is usually an unreal alternative in the actual world, it may be suggested that this conclusion is not of primary importance in the consideration of a dynamic system. The substitution of monopoly for competition may certainly involve waste; but as long as the industrial system as a whole is moving forward under the impetus of great technical discoveries applied by creative entrepreneurs, the wastes that can be detected at any moment in particular areas of the system as a result of monopoly are likely to be dwarfed by the progress elsewhere, and are in any case likely to be temporary. The real danger of monopoly arises when it is used to impede change. A society that keeps the channels of innovation clear need have little fear of the waste that arises from monopoly or imperfect competition in *established* industries. It is when these channels become choked that material progress slows down. If we look back on the metal industries of the last quarter of the nineteenth century, we can see that from the standpoint of economic progress the significant fact was not the extent to which the output of wrought iron was then restricted by the imperfections of competition among the producers, each with his famous brand of iron, but rather the entire destruction of the older forms of production by the coming of mass-produced steel. In the same way, I suggest, material progress in so far as it depends upon a supply of cheap textile materials will be bound up less with the success or failure of official schemes in the United States and elsewhere for keeping up the price of raw cotton than with developments in the manufacture of synthetic or semi-synthetic fibres—developments that have already brought down the price of staple fibre below that of raw cotton.

This brings me back to a consideration of our own affairs. Because of our precarious international position, not merely an advance in our material prosperity, but even the preservation of our existing standards, depend upon our demonstrating a capacity for industrial leadership. Yet, in spite of the achievements of our scientists and inventors, there can be little doubt that during the last few decades we have fallen behind other nations in successful industrial innovation. We have seen the undermining of our position in established industries by developments that have taken place abroad rather than at home. I can refer to only a few of the numerous causes that have been responsible. One of them, without doubt, has been the pre-occupation of policy with the buttressing of threatened positions rather than with clearing the way for fresh enterprise. But policy reflects social opinion, and it may be contended that this has been hostile to the exercise of industrial leadership. Sixty years ago Marshall noted that while economic progress did not necessarily require the maintenance of those rights of property that lead to extreme inequalities of wealth, it did depend upon the existence of a social milieu sympathetic to the exercise of free, individual responsibility.[1] Later, in his *Industry and Trade*, he pointed out that the United States was satisfying that condition more completely than this country :

> " As arts and sciences flourish best where their followers work for the approval of brethren of the craft, . . . so business flourishes most where the aim of the business man is not to shine in elegant society, but to be held in respect by those who are the best judges of his special form of strength.
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> " This exclusive devotion to one pursuit," he added, " involves some loss of life to the individual, but the constructive economic force which it gives to America at this phase of her development is unique." [2]

Although it can scarcely be said that the British business man to-day is distracted by a desire to shine in elegant society (for in contemporary England he would have difficulty in discovering that particular firmament), his " special form of strength " is not one which at present wins social approbation, and he is under even more insidious temptations to dissipate his energy. Consider the advisory committees, working parties, councils and associations, both official and unofficial, that have proliferated in recent years !

Centralised economic planning, moreover, necessarily restricts the functions of the industrial leader, for it leaves little opportunity for what has been called the very essence of free enterprise, namely " the concentration of responsibility in its two aspects of making decisions and taking the consequences of decisions when put into effect." [3] Under planning the business man cannot on his own responsibility create new combinations of resources; he becomes merely the administator of such resources as are allotted to him for given purposes. Professor MacGregor in his latest book draws a distinction between policy and plan. "A policy," he says, "is directive; a plan is executive."[1] Applying this principle to our present arrangements, he argues that only a small part of our economy, the nationalised sector (which according to Mr. Morrison is to be only 20% of the whole), is to be planned, while 80% of it will remain private and so subject to the method of policy. This definition may have its uses; but it conceals the real nature of planning. To my mind the distinctive feature of planning when compared with free enterprise is that the business man is unable to create fresh combinations of resources unless he first obtains the permission of the central authority whose decision follows from the plan which it has made. In that sense our present-day economy is largely planned, although how far these conditions are to be regarded as permanent and how far as arising out of our special post-war difficulties is not easy to determine.

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[1] *Memorials of Alfred Marshall*, pp. 282–3.

[2] A. Marshall, *Industry and Trade*, p. 156.

[3] F. H. Knight, *op. cit.*, p. 349.

Now it does not follow that if the private entrepreneur in this country has had his day, the function of innovation can no longer be performed at all. An alternative agency is the State, and we are thus led to consider whether government is, or can be made, competent to discharge this function which is so essential to material progress. I have little time to give to this question, but I should like to make a few comments upon it. In some countries the government has played a very important rôle as an innovator, and through its initiative the economic life of whole nations has been transformed. But its most notable successes have been achieved in introducing into primitive societies, where experienced private entrepreneurs have been scarce, the technique and forms of organisation already worked out in advanced countries. We cannot yet find, I think, any example of a State's having been responsible for developing successfully industries of an entirely novel kind in advanced societies, except perhaps those that serve military needs. When the government intervenes in such societies, it concerns itself with what is already established. It plans in relation to what exists, not in relation to what may be called into existence. Its tenderness for what already exists may even jeopardise the birth of new ventures, for economic advance frequently involves the destruction of established positions and the decay of industries that have become obsolete. A government can hardly be expected to take up new and untried ventures and to persist, in spite of disappointment and public criticism, in carrying them over the harrassing period of experimentation until they have become transformed into new industries. The concentration of attention on established firms is damaging to economic progress because new developments do not always, or even usually, spring from the more obvious origins. In this country it was not a firm in the major textile spinning industries, nor in the chemical industry, that built up the rayon industry, but a silk-weaving firm which happened at a critical moment to be employing an imaginative chemist in its dyeing department. It was not the great engineering firms that took up motor-car manufacture, but small firms in the bicycle, tinplate-ware, electrical apparatus and sheep-shearing machinery trades. Further, in many lines of production, there seems to be no unique solution to the problem of efficient organisation. An equally good result can be achieved in several different ways, and it is difficult to believe that a government would deliberately promote a diversity of this kind, even if it went so far as to recognise that diversity is itself fertile. The immense variety in the methods by which a woollen manufacturer may achieve a given standard of efficiency was noted by the Wool Working Party.[1] Diversity of method is even more characteristic of new industries in their early days than of old industries, and the superiority of any single method (if that ever emerges) is only brought out *ambulando*.

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[1] D. H. MacGregor, *Economic Thought and Policy*, pp. 132–3.

In the end the problem for government as for private enterprise becomes that of selecting the right person and of giving him scope for the exercise for his powers. The State may do this just as well as private enterprise for established undertakings, but it is not easy to see how it can carry out this function in the case of ventures which are in process of being born, for the men who are likely to do best in them are generally still young, unknown and untried. Any alternative to the older system must provide, to quote again from Marshall, " some reasonably efficient substitute " for the freedom which that system offered " to constructive genius to work its way to the light and to prove its existence by attempting difficult tasks on its own responsibility and succeeding in them; for those who have done most for the world have seldom been those whom their neighbours would have picked out as likely for the work." [2] One must not, of course, press this argument too far. If the supply of private initiative shows signs of failing, either through a decline in energy or through the creation of an environment uncongenial to its exercise—and this may come about through changes in social policy which the public requires—then the State must step into the breach. The time has not come for a final judgment on this issue. It would be rash to condemn novel kinds of economic arrangements because they pay little regard to the conditions necessary for the successful operation of past systems, which themselves had plenty of faults. All that I feel justified in concluding is this. One of the chief agents of economic progress during the last hundred and fifty years is likely to have little scope for its activities in this country during the years ahead, and at present there is no clear indication of how an adequate substitute is to be provided. Since this country is as firmly convinced as ever of the desirability of material progress, and since that progress in my view will depend upon its success as a pioneer in producing and marketing new kinds of industrial products, there is serious cause for concern.

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[1] *Report of Wool Working Party*, pp. 11 and *passim*.

[2] *Memorials of Alfred Marshall*, p. 284.

Apart from whether the government is competent in a technical sense to exercise industrial initiative, there remains the question whether the society whose resources it has taken upon itself to administer really wishes for innovation, not merely in the sense of being prepared to enjoy its fruits, but also in the sense of accepting the conditions for their harvesting. The question which Berkeley posed two centuries ago is highly relevant to government planning in a democratic society: "Whether it be not the Opinion or Will of the People, exciting them to Industry, that truly enricheth a Nation?"[1] An investigation of the ultimate causes that produce great outbursts of energy (as distinct from the instruments which they use), and a discussion of the conditions which make those outbursts creative and not destructive of the society in which they occur, would take us far beyond the subjects with which economists usually concern themselves. I shall content myself with a few reflections. Great industrial changes mean the disruption of older ways of life, and are not always compatible with social peace. As Knight says: "The more vital problems are not problems of economy, but of maintaining social unity in the face of economic interests."[2] Economic progress thus depends upon morale, which permits a reconciliation of innovation and social stability. As to the forces that have driven men to the furious pursuit of material progress, they lie, in the main, beyond the realm of cool, economic calculation, although calculation may be their tool. The investigators of American economic superiority, after listing the technical and administrative causes, find an unexplained residuum which they attribute to "the American way of Life." The Productivity Teams, for instance, make much of this in their reports. The inference that British industry is supposed to draw from this explanation is not always clear; but that "the American way of life" supplies much of the driving force to the American economic machine cannot be gainsaid. To go farther afield, soon after I interested myself in the economic affairs of the Japanese, I noted Marshall's comment on their extraordinarily rapid economic development after centuries of stagnation:

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[1] George Berkeley, *The Querist* (Reprint of Economic Tracts, Johns Hopkins University), p. 12.

[2] F. H. Knight, *op. cit.*, p. xxx.

> "Their quick rise to power supports the suggestion, made by the history of past times, that some touch of idealism, religious, patriotic or artistic, can generally be detected at the root of any great outburst of practical energy."[1]

In our own early industrial development the relationship that existed between Nonconformity and the rise of capitalist industry was once a commonplace of historical writing. In that connection, since I am speaking in Birmingham, may I be allowed to quote a passage which many years ago I gleaned from the records of one of the City's own great innovators, the firm of Boulton and Watt? This quotation is from a letter written in 1795 by an "adventurer" in the Cornish mines, Richard Mitchell by name.

> "I will venture to assert that, of all men for the last five hundred years, no two men have been of so much use . . . to the county as the Reverend J. Wesley with respect to Religion, and Mr. James Watt with his automatical machineries. Mr. Wesley . . . taught the vulgar to be sober, honest and industrious. . . . He not only taught them to live well, but to do well; therefore, he has now his reward in Heaven. Mr. Watt, after Mr. Wesley had taught them to be industrious, within the last twenty years has taught and helped them to get at the vast treasures, which Providence till then had hidden in the bowels of their county, by his fire engines for working deep mines, without which thousands on thousands of pounds of tin and copper must have remained there forever."[2]

The diversity of inspiration is striking: the American way of life, Emperor-Worship, John Wesley. Fortunately, an economist is not required to probe into these mysteries. He notes their existence, and for the rest he must content himself with expressing in his own jargon the substance of the familiar (and it is to be hoped) complimentary lines :

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[1] *Industry and Trade*, p. 161.

[2] Boulton and Watt Correspondence (Birmingham Reference Library), *Cornish Letters*.

> Time and the ocean and some fostering star
> In high cabal have made us what we are.

G. C. ALLEN

University College,
London.

THE STRUCTURE OF THE WESTERN GERMAN MONETARY SYSTEM

I

SINCE June 20, 1948, when the currency reform was carried out, the " Deutsche Mark " has been valid in the three Western Occupation Zones—the territory of the present Federal Republic of Germany. Currency reform had become necessary as, owing to the inflationary expansion of the volume of currency in war-time, a tremendous " over-balance " of legally unusable currency had gradually developed, prices and wages having been fixed by Government at the 1936 level. This over-balance threatened gradually to burst the whole structure of prices and wages and to transform the " suppressed " inflation into an " open " one. Currency reform, though, was based on the policy that the interrelations of prices and wages established during the Reichsmark-period should substantially be retained. It therefore abolished the disturbing " over-balance " of money.

This was executed in such a manner that cash money was totally called up to be deposited with the banks. The balances thus established, together with the already existing banking and savings accounts, were converted in Deutsche Marks at the rate originally of 10%, later 6·5%. All the other money claims, including securities, were devalued at a rate of 10 : 1.

From May 1, 1948, the Reichsmark rate of exchange for foreign-trade purposes had been fixed provisionally at 1 RM. = $0·30 ($1 = 3·33 RM.). This rate, however, was in the beginning not introduced uniformly for all import and export transactions, but was applied to the entire foreign trade step by step only. The reason was that the internal price level was practically frozen for years by a price-stop, except for important armament goods, the prices of which had undergone certain alterations, whereas foreign prices had continued to develop freely. Above all, the official food prices in force for the rations of the population had remained at a much lower level than abroad, whilst German prices of some industrial products were comparatively excessive. If, therefore, the relations between home and foreign prices had been restored *all at once* serious disturbances to the German home price structure would have occurred, causing social tension. From May 1, 1948, however, the afore-mentioned rate of exchange was in force for all imports uniformly, whereas certain old export contracts were granted exceptions up to November 30, 1949.

On September 29, 1949, Western Germany followed the international devaluation shift and reduced its rate of exchange from DM. 3·33 to DM. 4·2 for 1 U.S. dollar. The devaluation of the Deutsche Mark amounts to 20·6%. It remains substantially behind the most important currencies, particularly that of the sterling area, which was 30·6%. This means that the Deutsche Mark in fact was revalorised not inconsiderably *vis-à-vis* most of the other devaluation countries. The result on the one hand was the perceptible worsening of the German export trade, which had to put up with smaller proceeds; on the other hand, imports from countries with currencies devalued in excess of the German rate became considerably cheaper.

Foreign-exchange control after surrender remained in force without important alterations in its rigid regulations. All proceeds of foreign exchange had to be surrendered. Indeed, the Germans were and still are not allowed to keep foreign money or foreign accounts. Gradually, however, certain easements of exchange control were introduced in foreign-trade business. For instance, owing to liberalisation of trade with E.R.P. countries the allocation controls of foreign exchange were transformed into a mere supervision of payments, at least with respect to the articles belonging to the free lists: non-trade (capital) transactions with foreign countries, however, are still subject to rigid regulations establishing practically a total prohibition of payments.

II

After the abolition of the former Reichsmark currency the German economy was supplied with new money mainly from three sources: the so-called " Erstausstattung " (first outfit with new money), the afore-mentioned partial conversion of old Reichsmark bank balances into Deutsche Mark accounts and finally the creation of credit by the banking institutions. The two former measures are known as " legal money creation," since the extent and in effect the pace of their introduction had been stipulated from the very first by ordinances concerning the new formation of the monetary system. The counterparts of this money volume created by law are the so-called " Ausgleichsforderungen gegen die öffentliche Hand " (equalisation claims against the State) which are shown in the bank balances, 60% of them resting with the balance of the Central Bank System, 40% of them with the balances of the business banks.

In detail, all physical and legal entities, including the public offices and the Military Governments, received a first outfit of new money pursuant to the legal regulations amounting in total to 6·7 billion DM. Moreover, the banking institutions were granted a first allocation totalling 0·6 billion DM. in order to meet with their cash requirements. As concerns the conversion of the bank deposits, this was on the whole a relatively lengthy process, since the German Financial Authorities (Finanzämter) had first to examine whether tax was paid on such accounts and, if so, give the approval for their release; in the main the conversion was not accomplished before the second half of 1949. Bank accounts of the public offices, of the Military Governments and of the banking institutions were not converted; they were cancelled. On the whole, new bank deposits of about 6·6 billion DM. were created by conversion.

As mentioned before, the creation of "legal money" was supplemented by a further main source of money: the short-term credit of the banks. Originally this source was only of small importance *vis-à-vis* the "legal money," but since about the middle of 1949 it is practically the only source out of which new money can come forth in Western Germany. The short-term credits of business banks (excluding the credits given by one bank to another) have since currency reform up to the end of March 1950 attained a total amount of 11 billion DM.

The total money volume within the Western German monetary area amounted in consequence at the end of March 1950 to about 24 billion DM., of which sum 13 billions, *i.e.*, 54%, derived from the afore-mentioned legal money sources, whereas 11 billion DM., *i.e.*, 46%, originated from bank credits. In accordance with the requirements of the payments market the circulation of ready money amounted to nearly 8 billion DM.: the remaining 16 billion remained as deposits with the banks. Among these deposits, savings are beginning to play an increasing part: by end of March 1950 they totalled about 3·5 billion DM., nearly 1 billion DM. of which having been newly formed by net surplus balances since June 1949.

III

The influence exerted by the Central Bank System on the credit policies of the banks, and accordingly the control of the total money volume, followed the legal lines established for the discount policy, the policy of minimum reserves, the open-market policy and the power to issue regulations for general credit policy.

In fact, the Central Bank System is also entitled to credit selection and credit restriction. The latter possibility, however, is limited by a rule, pursuant to which the solvency and liquidity of the credit institutions have to be taken care of by the Landeszentralbanken (Länder Central Banks). Under the present circumstances the discount and minimum reserve policy are the main practical measures for the control of the credit volume, whilst purchase and sale of securities on the open market has hitherto hardly developed owing to the lack of a sufficiently broad market. All the discount changes of the Central Bank System usually have effect down to the interest rates charged the last credit recipient; for the credit conditions of the business banks are based on the discount rate of the Central Bank System, although the interest rates fixed and approved by the Banking Supervisory Boards are maximum rates only, which in practice are often undercut in consequence of competition. The discount policy of the Central Bank System therefore has a relatively effective influence on the credit demand and on the accumulation of bank deposits, so far as they respond to the height of interest rates at all. The determination of minimum reserves of the banking institutions which have to be placed with the Länder Central Banks is also meant to have effect on the supply of credit. For this reason the law provides that the Central Bank System may alter the minimum reserves of the business banks within certain limitations. These limits lie between 8% and 20% in the case of reserves held against sight deposits, and between 4% and 10% in the case of those held against time and savings deposits. According to a decision of the Council of the Central Banks in force since September 1, 1949, the minimum reserve rates are now fixed at 10% of sight deposits held at banking centres, at 8% of sight deposits held at non-banking centres, and at 4% of time and savings deposits wherever held. By varying the reserve ratios required the Central Bank System can expand as well as reduce the re-financing requirements of the business banks. Owing to this legal authority its influence on the general credit policy is reinforced considerably, since the tendency of the private banks towards credit granting is closely dependent on the status of their own liquid assets.

At present nearly all business banks are indebted in a relatively high degree to the Länder Central Banks. On April 30, 1950, the indebtedness amounted to about 3·7 billion DM. against barely 1 billion DM. of reserve accounts in favour of the banking institutions. On the basis of the April average the monthly surplus reserve totalled barely 100 million DM., which were concentrated mainly with a few Banks which were operating largely with public funds. The high indebtedness of the Business Banks to the Central Bank System derived particularly from the constant increase of the cash money circulation and, on the other hand, from the surplus of payments with the Bank Deutscher Länder hitherto currently accumulated owing to the passivity of the Western German foreign trade. On account of this heavy indebtedness, the possibilities of influencing the credit policy of the Business Banks are particularly great at the present period.

The scope of operations of the Bank Deutscher Länder and the Länder Central Banks is strictly defined by law. The Central Banks are entitled to carry out credit transactions only with banking institutions and public administration offices, whereas they can take over deposits from anybody. Credits in favour of banks are being granted by purchase of bills of exchange and cheques, also by loans against the deposit as pledge, of bills of exchange, of treasury-bills, fixed-interest securities or equalisation claims (viz., above). Only in the case when the maintenance of the solvency of a bank is at stake may the Länder Central Banks also purchase equalisation claims. Bills of exchange may be purchased or taken on as pledge only when they become due within three months from the date of purchase or pledging, and when three debtors known as solvent have signed the bill or the third signature is replaced by adequate securities. The German Länder may obtain from their competent Länder Central Banks only such cash credits as are required for bridging a temporary cash deficit. These credits should not amount to more than a fifth of the deposits of the Länder Central Banks. Furthermore, the Länder Central Banks may grant the Länder and the Federal Republic credits by purchasing treasury-bills, but the Boards of Directors of the Länder Central Banks are entitled to fix ceiling amounts for their stock of such bills. All credits which the Länder Central Banks are empowered to extend according to the abovementioned rules are legally fit for re-financing with the Bank Deutscher Länder, except the cash credits.

The Bank Deutscher Länder, on its part, when granting credits to the Federal Republic, is restricted in the same rigid way as the Länder Central Banks are in their credit operations with the Länder. Advances, short-term credits and treasury-bills of the Bund which the Bank Deutscher Länder has taken over on its own account, or for which it has extended a discount commitment, shall not surpass the amount of 1·5 billion DM. (including previous advances in favour of the former administration of the Combined Economic Area). The Bank Deutscher Länder can, in addition, purchase and sell debentures on the open market, whilst the Länder Central Banks are entitled to carry out open-market transactions with other fixed-interest securities also, and may have them re-financed by the Bank Deutscher Länder in case of need.

Of course, the Länder Central Banks as well as the Bank Deutscher Länder may purchase and sell foreign exchange, gold, silver and platinum, except where legal provisions do not permit such transactions.

The nature of the legal definition of the active operations of the Central Bank System is of great importance for the stability of the currency-value. The Central Bank System, on the one hand, is not allowed to chose other than short-term credits for a great part of its investments, and it must grant these credits mainly via banks. This insures that losses do not arise and that the volume of money can, in case of need, be reduced quickly and effectively at any time. On the other hand, the Central Bank System is not limited to short-term re-financing operations, but is empowered to invest at longer terms in securities, provided that they are marketable and have already passed through the market. Accordingly, the Central Banking System is in a position to exercise influence on the situation of the money market and, in that way, also to influence borrowing directly. In consequence, through the range of operations provided by law in favour of the Central Banking System, the organisation is enabled to protect the value of the currency in the same way as if special regulations as to the security of bank-notes were in existence.

IV

As regards the present situation which the Central Bank System has to face, Bank Deutscher Länder states the following opinion in its Report for 1948 and 1949 to be issued shortly :

> " The situation the bank had to meet with at the end of the business year 1949 was clearly characterized by two facts which stand in a certain contrast with one another and which do not ease the execution of an adequate credit policy : on the one hand a restrained development of the internal economy or, in any case, an economy not making sufficient use of the productive reserves and, on the other hand, a strained position of the balance of payments. The situation of the internal economy no doubt requires a credit policy on as liberal a scale as possible, although the opportunities of the bank of issue for influencing the general trend of business

> should, if they are not supported by an appropriate general economic policy, not be over-estimated. But the improvement of production and employment by means of credit policies cannot be unconditional, as the equilibrium of the balance of payments should in no way be endangered by internal economic measures, since viability, *i.e.*, the restoration of the external balance of payments, is as unconditional a liability of all ERP countries as the most far-reaching utilization of their productive reserves."

When the Bank, impressed by the growing unemployment figures, promised to give adequate financial help in favour of the Federal Government's Employment Programme of early 1950, it was well aware of those opposing potentialities. The Bank could base its policy on an improvement of productive conditions in Western Germany as against the preceding year. Therefore a well-calculated dosing of credit expansion was justified without endangering the stability of the internal price level. Decisive for this policy is, above all, the notable increase of the supply capacity, now that most of the bottlenecks in production have been effectively overcome, the fact that agriculture expanded strongly owing to the record harvest in 1949, and, along with the aforementioned development of banking liquidity in the second half of 1949, the credit capacity of the banks has become dependent on the Central Bank System in a way that removes all danger of an uncontrolled super-expansion. On the contrary, without a stronger participation of Central Bank credits, there would have been danger of too much restriction on the side of the credit operations of the banks—although with the extensive releases of E.R.P. Counterpart Funds, which began in December, one of the " credit freezing " factors had been abolished. In addition, the Central Bank System has—in full agreement with the Federal Government—given its financial assistance the character of pre-financing credits to be refunded by long-term resources which are expected to come in within reasonable time. After a certain period, therefore, Central Bank System will be able to reduce the expansion of the volume of money set forth by this means, in case it appears to be necessary for the sake of the monetary situation.

In these circumstances the policy of the Bank seems to be fully consistent with the requirements of foreign trade, demanding first and foremost an increase in exports. In fact, since the beginning of 1950 the Western German balance of payments in relation to the O.E.E.C. countries has shown aspects of improvement mainly because of the gradual extension of liberalisation in other countries—as also for certain automatic reasons. As soon as discriminations against Western Germany come to an end, the Federal Republic should be able to market at any rate as many goods and services in Europe as it will purchase from European countries. Even in this case, however, the problem of the dollar gap will still remain existent. In order to reduce this gap in spite of the high tariff barriers of the customer nations, certain special measures have already been introduced. The afore-mentioned improvement of the intra-European trade should contribute to the decrease of the dollar-deficit, as it will enable some shifts of purchases away from the dollar area to Europe, as well as a better international co-ordination and thereby an increase of rationalisation. The Bank therefore strongly welcomes the plan for a European Payments Union. It hopes that the scope of the Union will become as extensive as possible. The greater its range the more will it be able to expand the boundaries of internal economic development and the outlook of all countries.

Nevertheless, stress must repeatedly be laid upon the fact that the especially burdensome problem of re-installing the unemployed which Western Germany has to cope with cannot be solved quickly by means of credit-policy measures, owing in the first place to the balance of payments, as well as the internal economic difficulties deriving from a short-term solution of that kind. The problem lying before us is of structural character, originating from the tremendous shifts of people caused by the war, which, in a densely populated, import-dependent territory, such as Western Germany, can only be solved step by step, *i.e.*, along with the achievement of the re-installation of the Federal Republic into a World Economy to an extent consistent with its needs and the desirable standard of living.

H. J. ABS

THE DISTRIBUTION OF EARNINGS AND OF INDIVIDUAL OUTPUT[1]

I

THERE appears to exist to-day a fairly widespread conviction that if each individual were paid what he is worth, the distribution of incomes in any community would look like the distribution of heights of adult males instead of resembling the size distribution, by numbers employed, of firms in industry. This view is based upon the contention that it is the unequal distribution of property which is the root cause of gross inequalities of income. While accepting the fact that the property distribution is a most important aggravating factor, this article will attempt to argue that the distribution of earned income alone is itself of much the same form as the distribution of total income, and an endeavour will be made to discover the reasons for this. The claim that the distribution of output of a homogeneous commodity among individual workers is likely to be similar to the distribution of earnings itself will be subjected to statistical tests.

It is considered that the examination of the distribution of earned income alone will avoid the difficulties that are encountered when using distributions of total income derived from taxation statistics. Ambiguity exists over the precise meaning of " an income " as assessed for taxation and also with regard to the total number of such incomes. To some extent such problems can be shelved by fitting a Pareto distribution to the upper tail of distributions of taxable income, but in no sense can such a distribution be said to " explain " the distribution found to exist.

The assumption will be made throughout the discussion that the reader is familiar with the properties of the probability distribution known variously as the " normal distribution," the " Gaussian distribution " or the " normal curve of error."

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[1] I should like to take the opportunity of thanking the members of the various bodies who took so much trouble in giving me the information for which I asked and who have consented to the presentation of the data in this paper.

I should also like to express my debt to J. R. N. Stone, Esq., C.B.E., Director of the Department of Applied Economics, University of Cambridge, and to various members of the Faculty of Economics and Politics and of the Department of Applied Economics for their encouragement and help in preparing this paper; also to the computing and secretarial staff of the Department of Applied Economics for their assistance.

Finally, I take full responsibility for the views expressed and for the errors perpetrated in this work.

II

If the distributions of earnings of workers in industry or of professional men, both in this country and in the United States, are examined, it is found that they can be reasonably approximated by fitting a theoretical probability distribution, in which the logarithms of earnings conform to the normal curve of error. Such a distribution will be called in what follows a logarithmic normal ("log-normal" for short) distribution.

This fact can be confirmed by studying such earnings distributions as exist, *e.g.*, those given in the results of the Wages and Earnings Enquiry of 1906, in S. Kuznets' and M. Friedman's *Income from Independent Professional Practice* and, in respect of British Dentists, in *The Times*, of May 20, 1949.

There must be some rational explanation of the fact that all these earnings' distributions have such similar shapes. The reasons may be highly complex, and if so it is unlikely that they can be found but, on the other hand, there may be a relatively simple solution to the problem. Can such a simple hypothesis be found?

Let it be assumed that workers earnings are related to the output that they produce of a commodity. This is not as restrictive an assumption as it might first appear, for even when workers are paid day wages the rate of payment is related to the real output that is expected from workers of the particular class in question. If in the long run such expectations are falsified the wages will be revised appropriately. The assumption is, then, that all workers tend to be rewarded in direct proportion to the output that they produce or, in other words, that the ruling method of wage-payment is considered to be straight piece-work.

Suppose now that out of the entire working population, a large sample of workers is selected and then trained and set to work producing the same homogeneous commodity. The product that they make is one that can be made by hand, and thus the time that any individual takes to produce one article depends solely on his own skill and training and is not affected by the running time of any machine. Let the group of work-people continue at this job for some length of time, such as a month or a year; at the end of the time period, how will the output of the commodity be distributed amongst the various operators?

Investigations have shown that in nature many characteristics tend to be distributed approximately normally, and thus, perhaps, the distribution of output of human beings will have similar properties. For after all the adult human is himself a fairly standard product, whose attributes do not appear to be capable of very wide variation. Our heights are normally distributed, and so, psychologists tell us, are our intelligence quotients. The latter claim should not be taken too seriously, since it is more informative about psychologists' systems of measurement than about anything else.

Weights and volumes, however, are not, in general, normally distributed, because as can be easily understood their distributions tend to the distributions of the product of three linear measurements which are each normally distributed. These distributions have in some measure the characteristic form which is, in economics, associated with income distribution.

The reason for the natural distribution of weights may well provide the key to the distribution of output. Suppose that the sample of workers has been selected at random, *i.e.*, each worker in the whole working population has an equal chance of being chosen. Assume further, that workers differ in speed of working, in accuracy and in the numbers of hours that they work. For each of these properties there exists a probability distribution which for the sake of simplicity will be assumed to be a binomial one. Further, each distribution will be deemed to be independent in the statistical sense of that word, *i.e.*, a high (or low) speed for a worker is not, in general, associated with long (or short) hours of work or with meticulous accuracy (or the reverse). In other words, in the entire working population these three characteristics are uncorrelated.

On this foundation, consider the following numerical example :

TABLE I

Distributions of Speed, Accuracy and Hours of Work

Speed (units produced per hour).	Accuracy (proportion of production approved).	Hours of work per day.	Number of workers (per thousand all workers) to which figures in columns 1, 2 and 3 apply.
(1)	(2)	(3)	(4)
2	0·50	4	250
3	0·75	6	500
4	1·00	8	250
			1,000

At the end of a day the output of any worker will equal the product of his speed, accuracy and hours of work, and will therefore be distributed as in Table II.

TABLE II

Distribution of Effective Daily Output

Daily output (units).	Number of workers in class per thousand all workers.
0 and under 5	15
5 and under 10	328
10 and under 15	313
15 and under 20	234
20 and under 25	94
25 and over	15
	1,000

Note.—Column total does not *exactly* equal figure at foot of column owing to rounding.

A cursory examination of Table II shows that the distribution of output is skew (or asymmetrical), although the three distributions of speed, accuracy and hours of work were all symmetrical. This phenomenon is a particular manifestion of a very general theorem in statistics known as the Central Limit Theorem.[1] Broadly speaking, this theorem states that the distribution of the sum of variates, which themselves have independent distributions of a very general kind, tends to normality as the number of such variates is increased. Applying this theorem to the logarithms of variates, it follows that the distribution of the product of independently distributed variates tends to log-normality as the number of such variates increases, provided that the logarithms of the variates have probability distributions which fulfil the not very restrictive conditions of the Central Limit Theorem.

For simplicity we have considered the distribution of the product of only three variates, but the three factors considered may themselves be derived from the multiplication of a large number of other basic variates. In other words, perhaps it is more realistic to consider the distributions of speed, accuracy and hours of work to be asymmetrical in the same direction as the distribution of output which was obtained from their multiplication. For speed alone perhaps it is true that, although most people have a relatively low speed of working, yet there is a long upper tail to the distribution containing individuals capable of remarkably high speeds. If this is so, then the distribution of output would approximate far more closely to the log-normal distribution than does the distribution obtained in the example given here.

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[1] See, for instance, H. Cramer's *Mathematical Methods of Statistics*, pp. 213 *et seq.*

The proposition is, then, that the output of an individual depends on a great number of different factors which may conveniently be considered to act together in a multiplicative rather than in an additive way. As far as simplicity is concerned there is no reason to place multiplication lower in the scale than addition. All this means is that any one factor, such as health, exercises its effect proportionately, and work-people with the same degree of ill health tend to have their output reduced in the same ratio rather than by the same absolute amount. Similarly, women's output will tend to be a certain fraction of the output of men of similar skill, age, education and so on.

So far it has been assumed that the various factors on which output depends are uncorrelated, *e.g.*, skill is not, in general, associated with age or with education. This is obviously a very unreal assumption which ought to be removed, but unfortunately this cannot be done in an entirely satisfactory way. Nevertheless, there do exist some indications of the effect of dispensing with the condition of independence. Professor Haldane has shown that distribution of the product of three correlated normally distributed variates does not differ markedly from the distribution when the variates are independent, provided that the ratios of the standard deviation to the mean (coefficients of variation) of each of the three variates are approximately equal.[1] If, however, these ratios are unequal the existence of an association between the variates tends to exaggerate the asymmetry and the humpedness of the distribution of their product. This would mean that more individuals would have very high outputs than would be indicated by a log-normal distribution. Examination of the distributions of the earnings of professional men show that this systematic departure from log-normality at the upper tail of the distribution does in fact exist.

Putting on one side for the moment the question of testing statistically the hypothesis that output of any one commodity is distributed log-normally, let it be assumed that such is indeed the case. Then, before the theory so far outlined can be regarded as a satisfactory explanation of the distribution of earnings, the effect of introducing a large number of different goods into the economy must be considered. Any one member of the working population is potentially capable of producing some output (however small) of every commodity, but in fact he will produce only one. If all the working population were employed in one occupation, the distribution of output would be log-normal. Suppose there are two possible occupations and that demand conditions require a certain proportion of the labour force to be in each occupation. Then the piece-rates in the two occupations must be varied until the chance of an individual obtaining higher earnings in one of the two occupations is equal to the proportion of the labour force required in that occupation, assuming that labour is perfectly mobile. The shape of the distribution of earnings that results from this adjustment depends on two considerations, the proportions of the labour force required in each occupation and the association existing between any individual's performance in the two occupations.[1] Provided that those people with high outputs in one occupation would, in general, have high outputs in the other, the distribution of earnings will approximate closely to log-normality. Even if the reverse held, the effect would be unimportant if only a small proportion of the labour force were required in one of the occupations. In the extreme case where the best performers in one occupation were the worst in the other and where the labour force was equally divided between both occupations, the distribution of earnings would tend to a log-normal distribution with the part containing the lower half of the total frequency removed.

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[1] J. B. S. Haldane, " Moments of the distribution of powers and products of normal variates," *Biometrika* (1942), 32 pp. 226 *et seq.*

This argument can be reasonably easily extended to the case where many occupations exist. In order that a log-normal distribution of output of any given commodity should give rise to a log-normal distribution of earnings for all occupations taken together, the assumption must be made that a high degree of association exists between any individual's possible outputs in the major occupations of the economy. Major, in this context, meaning the employment of a substantial proportion of the working population.

Even if this assumption is valid, labour is not highly mobile in the short run, and consequently an additional factor is operating to distort the distribution of earnings away from log-normality. The theory, then, even if it is acceptable on other grounds, can only be regarded as describing the causes that make the distribution of earnings tend to log-normality in the long run. The existence of machines having fixed running times will only be a disturbing factor in the short period.

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[1] This statement and what follows are only strictly true if the number of persons, whose potential output is more than x times the geometric mean output, is the same in both occupations for all values of x.

III

The next task must be an endeavour to provide some statistical verification or disproof of the abstract argument which has been given at some length. This attempt gives rise to various difficulties of a statistical character. The requirement is to find a sample, preferably large, of workers engaged in producing exactly similar objects. Such a sample ought to be random, *i.e.*, each member of the working population should have an equal chance of being chosen. The work done must depend solely on the worker, and must not be limited by the time of operation of a machine or by an inadequate flow of materials.

In modern industry very few people can be found who are doing exactly the same job. A larger number are doing relatively similar tasks, but the assessment of their outputs on a comparable basis involves value judgments which would seriously affect the validity of any deductions that might be drawn. The samples are thus inevitably small.

The workers engaged on a particular job have not an equal chance of being drawn from all strata of the working population. They are probably selected from a rather restricted field. If a certain minimum of intelligence, skill, etc., is required, workers below this standard will be rejected by the management at some stage, while the workers, whose capacity is not fully used in this activity, will either be promoted or will themselves undertake more suitable sorts of employment. On the whole, it may be expected that the inferior workers will be eliminated more thoroughly than the high-grade ones, since the interests of the management demand this. In so far as the employing company carries out careful and systematic personnel selection, so will the field from which the workers come be narrowed still further.

It might so happen that a group of workers in industry, of which the variations in individual output are studied, had decided to do a " fair " day's work for the management and no more. In this case, the distribution of daily output is likely to be concentrated about their estimate of the work required, but it must be hoped that this state of affairs will be comparatively rare.

Obviously, we are powerless to do anything about these possible difficulties. It must be assumed that the factors determining any worker's occupation are not associated in any marked degree with the size of his output in any period. If this assumption is not justified, the statistical tests used will be invalid.

If fortune had provided large samples of workers doing the same thing, the testing process would be fairly simple. Two hypotheses could be set up; (i) that the sample had been drawn from a population of workers in which individual output was distributed normally; (ii) that the distribution of output in the population was log-normal. These two possible distributions could then be fitted to the sample data, and the probability of each hypothesis could be calculated. It might be found possible to reject one or other hypothesis, or simply to say that one appeared more probable than the other.

Although the procedure adopted is roughly equivalent to that sketched out, the fact that the samples are small means that the fitting of log-normal and normal distributions to the data would waste information owing to the necessity of grouping the observations in classes. Instead, therefore, measures[1] of the asymmetry and humpedness of the sample distributions of individual output and of the logarithms of output are calculated. Geary and Pearson have tabulated[2] the values of these measures which will turn up by chance 1 in 20 and 1 in 100 times in samples drawn at random from normal populations for different sizes of sample. The mean or expected values of the measures for different sample sizes are also known. Thus it may be possible to reject an hypothesis on some ground or to say that under the circumstances it is more probable than another. The method of procedure will be clarified by discussing particular applications.

IV

In this section, an account will be given of the samples obtained and of the deductions that can be drawn therefrom. Each sample is denoted by a letter of the alphabet.

Sample A. In a certain factory thirty-five girls were engaged in packing boxes with chocolates. This they did entirely by hand, but the supply of chocolates was delivered to them on a moving belt. The girls' positions astride the belt were changed each day, since the end positions were thought to receive a restricted supply of chocolates. The extent of the control over

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[1] If the sample consists of n values $x_1, x_2, \dots . x_n$, the two following measures are calculated :

$$a(1) = \frac{\text{mean deviation}}{\text{standard deviation}} = \frac{1}{n}\sum_1^n \left| x_i - \frac{1}{n}\sum_1^n x_i \right| \Big/ \left\{ \frac{1}{n}\sum_1^n x_i^2 - \left(\frac{1}{n}\sum_1^n x_i\right)^2 \right\}^{1/2}$$

and $$g_1 = \frac{\frac{1}{n(n-1)(n-2)}\left(n^2 \sum_1^n x_i^3 - 3n \sum_1^n x_i^2 \sum_1^n x_j + 2\left(\sum_1^n x_i\right)^3\right)}{\left\{\frac{1}{n(n-1)}\left(n\sum_1^n x_i^2 - \left(\sum_1^n x_i\right)^2\right)\right\}^{3/2}}$$

[2] R. C. Geary and E. G. Pearson, *Tests of Normality*, Biometrika Office, 1938 (or *Biometrika* (1935)).

variations in output among the girls exercised by the uniform speed of the belt is difficult to estimate.

From information giving the total weekly output and hours worked in four successive weeks, the average hourly output over the whole period was calculated for each operator. The two measures described above relating to the asymmetry and humpedness of the sample distributions of output and of the logarithms of output were obtained.

TABLE III

Variate.	Humpedness (mean deviation/standard deviation).	Asymmetry (skewness).
Hourly output	0·858	+ 0·365
Logarithm of hourly output . .	0·853	- 0·067

Geary and Pearson's tables disclose that a humpedness, in this sense, of 0·878 or higher would occur by chance only 1 in 100 times if the sample had been drawn at random from a normal population. A value of 0·859 or higher would turn up 1 in 20 times, and a value of 0·848 or higher would turn up 1 in 10 times. The expected value of the humpedness is 0·835. Similarly, a measure of asymmetry as high as ± 0·921 would appear only once in a 100 times, and a value as high as ± 0·621 once in 20 times; the expected value is zero.

An hypothesis will be rejected only if the chance is less than 1 in 20, and so we cannot in this example reject either hypothesis. On the other hand, the two measures are nearer their expected values for the logarithms of hourly output, and consequently, the hypothesis that individual output is distributed log-normally is the more probable of the two.

Sample B. In the same factory as for *A* sixty-six girls packed chocolates in a different way which was easier than the method used in *A*. The data was supplied for the same period, and was treated in the same manner.

TABLE IV

Variate.	Humpedness (mean deviation/standard deviation).	Asymmetry (skewness).
Hourly output	0·796	+0·027
Logarithm of hourly output . .	0·793	−0·029

TABLE V

(Sample size = 66).

Value of humpedness (expected value = 0·801).	Value of asymmetry (expected value zero).	Chances of such values occurring in sample drawn at random from a normal population.
0·737 or less	+0·692 or more −0·692 or less	1 in 100
0·757 or less	+0·470 or more −0·470 or less	1 in 20
0·767 or less	—	1 in 10

Neither hypothesis can be rejected, but the normal distribution is more probable than the log-normal one.

Sample C. In a tobacco factory, eleven girls packed round tins with fifty cigarettes in each tin. Their average output per hour was calculated and the customary measures obtained.

TABLE VI

Variate.	Humpedness (mean deviation/standard deviation).	Asymmetry (skewness).
Hourly output	0·822	+0·229
Logarithm of hourly output . .	0·844	−0·043

TABLE VII

(Sample size = 11).

Value of humpedness (expected value = 0·818).	Value of asymmetry (expected value zero).	Chance of such values occurring in a sample drawn at random from a normal population.
0·936 or more	Not tabulated	1 in 100
0·907 or more		1 in 20
0·890 or more		1 in 10

The above table and extrapolation by eye for asymmetry do not enable either hypothesis to be discarded. From the point of view of humpedness the normal distribution is more likely, but asymmetry favours the log-normal distribution. The test is thus inconclusive.

Sample D. In the same works as *C*, twenty girls packed cigarettes by hand into flat tins holding twenty-five cigarettes.

TABLE IX

Variate.	Humpedness (mean deviation/standard deviation).	Asymmetry (skewness).
Hourly output	0·758	−0·304
Logarithm of hourly output . .	0·749	−0·847

The average number of cigarettes packed per hour by each operator was computed and the results treated in the usual way.

TABLE X

Value of humpedness (expected value = 0·809).	Value of asymmetry (expected value zero).	Chance of such values occurring in a sample drawn at random from a normal population.
0·698 or less	Not tabulated	1 in 100
0·729 or less		1 in 20
0·749 or less		1 in 10

On the grounds of excessive asymmetry, which can be detected by extrapolation by eye, the hypothesis of a log-normal distribution can be rejected, and thus the test decides in favour of a normal distribution.

Sample E. Twenty-one men and twenty-four women were employed in making springs in a company manufacturing electrical equipment. The exclusively male and female groups were first

TABLE XI

Variate.	Group.	Humpedness (mean deviation/standard deviation).	Asymmetry (skewness).
Hourly output	Male	0·859	+0·136
	Female	0·780	+0·547
	Whole	0·789	+0·214
Logarithm of hourly output	Male	0·850	−0·482
	Female	0·792	−0·014
	Whole	0·807	−0·371

TABLE XII

Value of humpedness.			Value of asymmetry.			Chance of such values occurring in a sample drawn at random from a normal population.
Sample size.						
21	24	45	21	24	45	
Expected value.						
0·808	0·807	0·802	0	0	0	
0·905 or more	0·701 or less	0·724 or less	Not tabulated	+1·075 or more −1·075 or less	+0·825 or more −0·815 or less	1 in 100
0·877 or more	0·733 or less	0·749 or less		+0·720 or more −0·720 or less	+0·560 or more −0·560 or less	1 in 20
0·863 or more	0·752 or less	0·762 or less		—	—	1 in 10

treated separately, and then, since the average output per hour in the week concerned was found to be significantly different for men and women, the sample was taken as a whole, with the differences in output due to sex eliminated. In other words, the distribution of variations of output about the appropriate sex mean was examined.

In the purely male group humpedness favours a log-normal distribution and asymmetry a normal one. In the female group both measures favour the hypothesis of selection from a log-normal distribution. Taking the whole sample together, the test is inconclusive in the same way as for the male part alone.

Sample F. In the same firm as that for *E*, seventy-three operators were engaged on bank wiring. Seventy-two of the workers were women, and one was a man. Probably the man should have been excluded from consideration in order to achieve homogeneity, but in the event he was not. The information obtained related to a single week, and the average hourly output of each operator was calculated. The customary analysis yielded the following results :

TABLE XIII

Variate.	Humpedness (mean deviation/standard deviation).	Asymmetry (skewness).
Hourly output	0·828	+0·480
Logarithm of hourly output . .	0·818	−0·471

TABLE XIV

(Sample size = 73.)

Value of humpedness (expected value = 0·800).	Value of asymmetry (expected value zero).	Chance of such values occurring in a sample drawn at random from a normal population.
0·854 or more	+0·659 or more −0·659 or less	1 in 100
0·840 or more	+0·448 or more −0·448 or less	1 in 20
0·832 or more	--	1 in 10

Both hypotheses can be rejected on grounds of excessive asymmetry, but that of a log-normal distribution is more probable than the other.

Sample G. In the closing room of a shoe factory, the output of twelve female top-stitchers was recorded over a period of six weeks. In this instance the ages of the operators were also known, and, to prevent the age distribution of the workers in the sample producing a peculiar result, that part of the variation in output due to age differences was eliminated. Although in this particular sample the association between age and output would not on its own be adjudged significant, other evidence suggests that in the working population as a whole such an association exists.

Output per hour was not measured directly, but as average piece-rate earnings in pence per hour. With an operator of twenty years of age earning on the average 2*s.* 4*d.* per hour, the elapse of each year would be expected to reduce her earnings by 0·023*d.* per hour. An independent calculation using the logarithms of output shows that each year the average operator's output per hour may be expected to fall by less than $\frac{1}{10}\%$.

Having disposed of age differences, the measures calculated were :—

TABLE XV

Variate.	Humpedness (mean deviation/standard deviation).	Asymmetry (skewness).
Hourly output	0·766	− 1·668
Logarithm of hourly output . .	0·758	−1·791

TABLE XVI

(Sample size = 12.)

Value of humpedness (expected value = 0·816).	Value of asymmetry (expected value zero).	Chance of such values occurring in a sample drawn at random from a normal population.
0·671 or less	Not tabulated	1 in 100
0·717 or less		1 in 20
0·742 or less		1 in 10

Extrapolation by eye suggests that both hypotheses can be discarded owing to the extent of the asymmetry, but of the two distributions the normal one is the more probable.

Sample H. Nine women operators were employed winding armatures of identical pattern. Their average hourly output over a four-week period was obtained and their ages were known. Despite the very small size of the sample, there was an almost significant association between age and hourly output. From the age of twenty the average hourly output of about 9·5 armatures would be reduced on the average by 0·037 of an armature every year. Or, looking at the matter proportionately, hourly output would fall each year by about $\frac{2}{5}\%$ on the average.

After the effects of differing ages had been eliminated, the results were as follows :

TABLE XVII

Variate.	Humpedness (mean deviation/standard deviation).	Asymmetry (skewness).
Hourly output	0·890	+0·513
Logarithm of hourly output . .	0·885	+0·506

In Geary's and Pearson's tables no values are given for this size of sample, but extrapolation by eye shows that neither hypothesis can be rejected. The log-normal distribution is the more likely one..

Sample I. In a gramophone-record factory twenty-four men were operating record presses. This sample does not fulfil the requirements laid down, since each record must remain in the press for a fixed curing time, and the speed of work is thus not wholly under the operator's control.

Average outputs per hour over a period of four weeks were calculated and treated in the usual way.

TABLE XVIII

Variate.	Humpedness (mean deviation/standard deviation).	Asymmetry (skewness).
Hourly output	0·869	+0·369
Logarithm of hourly output . .	0 878	+0·240

TABLE XIX
(Sample size = 24.)

Value of humpedness (expected value = 0·807).	Value of asymmetry (expected value zero).	Chance of such values occurring in a sample drawn at random from a normal population.
0·894 or more	Not tabulated	1 in 100
0·871 or more		1 in 20
0·859 or more		1 in 10

Extrapolation by eye must again be used and the test is inconclusive, humpedness favours a normal distribution, but asymmetry a log-normal distribution.

Sample J. Twenty-five male packers were engaged in packing toilet requisites, photographic goods, stationery, surgical dressings, etc., into cartons and cases. The cases were collected from a central point in the department and then filled with goods and packing straw. They were fastened and labelled ready for transport outward.

This sample does not satisfy the requirement of homogeneity of output, but a system of points was used based on an estimate of the average time for each kind of job. Output in points was calculated for each operator for a standard 8½-hour day based on information collected over a four-week period. The sample differs from the previous ones in that the men were paid time- and not piece-rates.

The age of each operator was known, and the effects of differing ages were removed. With the average output per standard day of about 148 points for a worker of twenty, the average fell by 0·55 of a point per day for each additional year of age. Using proportions instead of absolute changes, average output per standard day fell by ⅖% a year.

TABLE XX

Variate.	Humpedness (mean deviation/standard deviation).	Asymmetry (skewness).
Daily output	0·787	+ 0·619
Logarithm of daily output . .	0·803	+ 0·235

TABLE XXI

Value of humpedness (expected value = 0·806).	Value of asymmetry (expected value zero).	Chance of such values occurring in a sample drawn at random from a normal population.
0·704 or less	{ + 1·061 or more − 1·061 or less }	1 in 100
0·735 or less	{ + 0·711 or more − 0·711 or less }	1 in 20
0·752 or less	—	1 in 10

Neither hypothesis can be discarded, but a log-normal distribution is the more likely one.

Sample K. The details concerning this sample were kindly supplied by Professor Sir F. C. Bartlett, C.B.E., F.R.S., Director of the Psychological Laboratory, University of Cambridge.[1] A test was devised in which a person had to repeat a cycle of operations similar to those performed by workers in light industry. Each person who underwent the test had no practice, and did not know that it was to last 30 minutes. The number of operations completed in this time by the hundred and seven airmen, sailors, undergraduates, B.O.A.C. employees, etc., who did the test varied from 28 to 342.

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[1] The data were collected experimentally by Miss Ruth Brown for purposes which were not concerned with the particular aims of my investigation.

The age-distribution of the sample was peculiar, and it was therefore essential that variations due to this should be removed. There was a significant association in the sample between age and the number of operations completed. With the average number of operations for a man of twenty approximately equal to 142, each year of age above this reduced the average by 0·62 of an operation. Alternatively, the passage of one year reduced the average number of operations completed by $\frac{3}{8}$%.

TABLE XXII

Variate.	Humpedness (mean deviation/standard deviation).	Asymmetry (skewness).
Output in 30 minutes	0·749	+0·903
Logarithm of output in 30 minutes .	0·781	−0·537

TABLE XXIII

(Sample size = 107.)

Value of humpedness (expected value = 0·800).	Value of asymmetry (expected value zero).	Chance of such values occurring in a sample drawn at random from a normal population.
0·749 or less	+0·550 or more −0·550 or less	1 in 100
0·765 or less	+0·377 or more −0·377 or less	1 in 20
0·773 or less	—	1 in 10

Here there are very strong grounds for rejecting the hypothesis of a normal distribution, since the values of both measures could occur by chance less than once in a hundred times. The hypothesis of a log-normal distribution could also be rejected, although less emphatically, because of excessive asymmetry.

V

The evidence is certainly confusing, with varying results being given by the analysis of the different samples. It should, however, be emphasised that the sample *K* differs in important respects from all the others. No selection, such as is probably at work in industry, operated in the laboratory test. There is no reason to believe that there was any systematic restriction of output. In the samples drawn from industry the selective process is likely to exaggerate asymmetry, whereas the motivation towards the production of a given output by all workers will diminish it. It seems reasonable that the evidence of sample K should be treated with more respect than that of the other samples.

Theoretically it is possible to combine all the samples so that the two hypotheses can be tested on all the evidence at once, but in practice such an attempt would entail an enormous burden of computation. We must rest content with less sophisticated methods of analysis.

Out of the twelve different samples (counting E as two) in three cases the hypothesis of a normal distribution can be rejected, while that of a log-normal distribution could be discarded in four instances. Judging by the criterion of humpedness alone, the normal hypothesis is more probable on five occasions and the log-normal hypothesis on seven. Using asymmetry alone as the test, the normal hypothesis is more likely in four cases, and the log-normal hypothesis in eight. Possibly this suggests that the evidence is slightly more in favour of the log-normal distribution.

Considering the distribution of hourly output (or its equivalent), in ten cases out of twelve the asymmetry is in the same direction, *i.e.*, the longer tail is at the upper end of the distribution. With the logarithms of hourly output, the asymmetry is in the same direction in nine instances but the longer tail is the lower one. This would seem to suggest that the speed of output is distributed asymmetrically, but not to the extent that applies to a log-normal distribution.

Before, however, output per hour can be related to earnings in a more lengthy period, the distribution of such things as hours worked, different variations in speeds over time for different workers, the incidence of ill health and of many other factors must be brought into the picture. Even if output per hour does not approximate very closely to the distribution of yearly earnings the distribution of output per year may well do so.

Undoubtedly few positive deductions can be made as a result of this investigation, but it is clear that empirical evidence of the tendency for linear measurements in nature and Intelligence Quotients to be distributed normally forms an inadequate platform from which to attack the present (or the past) inequality of incomes.

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THE UNITY OF POLITICAL AND ECONOMIC SCIENCE

1. THIS article will put forward the view that Economic and Political Science are the same in kind : that when we do eventually obtain a " satisfactory " Political Science it will have the same distinguishing marks as Walras' *Éléments* or Pareto's *Manuel*—or perhaps Marshall's *Principles,* with the admixture of the rigorously formal and the descriptive treatment—rather than those of the existing texts in Politics.[1] And the core of the treatment, we hold, will consist of a set of formal or mathematical propositions.

2. The main reason which I can give in substantiation of this view is that it is possible, using terms which are precisely those of Economic Science, to construct a Theory of Committee Decisions.[2] In getting a theory of the committee, however, it is clear that we at the same time get a sufficient means to construct a Theory of Politics. All that is needed for this is to construct a theory of the committee that is sufficiently comprehensive. When this has been done we can deduce from the schedules of valuation of the individuals in the community, taken in conjunction with the election law which is initially existent, which Members will be elected to Paliament (and which representatives will be selected for local-government councils). But Parliament is itself a bicameral committee; its workings will therefore be covered, as will those of the cabinet, which is a committee requiring unanimous decisions on the part of its members. The party machines are again committees which help to determine the transactions inside Parliament; and their workings, too, can be examined in terms of a theory of committees. At the highest level, international agreements are reached by committees which again require unanimity in their decisions.

Admittedly the theory which has been given so far would not cover the workings of all committees; but this can be done by an elaboration of the same *kind* of theory, which, in principle, is capable of covering all types of committee action.

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[1] We distinguish between Politics, the science, and politics meaning political phenomena, by the use of the capital letter; and similarly in other cases.

[2] Cf. Black, " The Rationale of Group Decision-Making," *Journal of Political Economy*, February 1948, and " The Decisions of a Committee Using a Special Majority," *Econometrica*, July 1948, for the outlines of such a theory.

A theory of committees seems to be obtainable; and, if so, we argue, a Theory of Politics. And the essential features of a Theory of Politics obtained along these lines will be those of a theory of committees. But, as we will proceed to show, these essential features are precisely those of Economic Science. Indeed, if we accept the view that a Politics can be developed out of the theory of committees, then Political Science and Economic Science would appear quite definitely to be two branches of the same subject. In particular, we can specify that they make use of the same language, the same mode of abstraction, the same instruments of thought and the same method of reasoning—because this is true of the theory of committees and of Economic Science.

3. The use of the same terminology in the two sciences perhaps goes farther than anything else to prove their fundamental identity: this because one's thinking is largely conditioned by the means of expression at command, and language permeates thinking to its innermost core and in all its recesses. The importance of language is evident enough when the stage has been reached of giving an intelligible formulation to the results arrived at: the degree of success achieved in presenting the system of thought will largely depend on the adequacy of the technical terms employed. But before the stage has been reached of making explicit the results of such thinking as has already been carried out, a language, if it were really suitable to the subject, would direct the mind at the beginning of thought to those elements in the situation which are significant, would suggest to the imagination and intellect the actual or possible inter-relations between the elements, and would enable one to "fumble one's way gently and patiently through the problem." Thus the adequacy of a Political Science developed as we suggest, will depend, among other things, on how far economic language—for the language of the theory of committees comes entirely from Economic Science—can first capture and then make explicit, thoughts which relate to a field other than Economics, viz., to Politics.

Now if Economics and Politics were separate and distinct subjects, such a use of language would certainly be disadvantageous. If, however, Political Science were really one with Economic Science, far from the use of the borrowed vocabulary being a draw-back, it would be a help. Economic Science has been built up progressively and continuously over two centuries; it has worked its way through to a language which has laid an always firmer grasp on the concepts necessary for thought; the progress has been made by a succession of distinguished thinkers, each taking over and developing the work of his predecessors. Political Science,[1] on the other hand, has been little cultivated; its lists contain few names of a lustre similar to those of Economics; it has nothing to show of the same continuity of development as Economics. In the one science the heritage of language is much richer, of greater pliancy and exactitude than in the other.

If it is legitimate for Political Science to make use of this heritage of language and concept, it should be to its immediate and considerable advantage. We ourselves have been led to the belief that it is, by finding that the problems of committees could be resolved by a use of economic language that was quite natural and unforced. From the explanations that we go on to give it will become clear that this means of expression has determined the crucial steps in breaking down the problem into its elements.

4. To get the very complex materials with which they deal sufficiently simplified to be dealt with in thought, both sciences, Economics and Politics, have to abstract from the situations met with in practice; they must deal only with certain aspects of the situations and disregard the others. First, they must find the answers to the simpler problems; and after that, with a lesser degree of abstraction, they can pass on to consider the more complex problems. In doing this Politics will make use of what, in virtue of its earlier historic development, can be referred to as the *economic mode of abstraction.*

One feature of this is that the treatment is often of the " timeless " variety : time does not enter into the equations used. In the theory of the market or of marginal productivity, for instance, the *data* are assumed to remain unchanged until such period as equilibrium is attained; and after that, with the persistence of the same *data*, the position of equilibrium will remain unaltered. Similarly, in dealing with committees many of the basic theorems are obtainable by assuming *data* that don't alter with time and examining the positions of equilibrium that will be reached.

But in neither subject is this a necessary limitation. Rather it is a simplifying device used to obtain the broad outlines of an answer. When a further degree of approximation to reality is needed, or when certain problems come to be investigated, time must be taken into account. The same means of doing this exist in both subjects, and the same difficulties arise in both.[2]

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[1] Though not Political Philosophy.

[2] Cf. P. N. Rosenstein-Rodan, " The Role of Time in Economic Theory," *Economica*, N.S., Vol. I, 1934.

5. The most important feature of this mode of abstraction, however, is that in both sciences the individual is represented by his schedule of preferences.

Economic Science looks on the various phenomena with which it deals as the outcome of the valuations placed upon goods and services by the individuals concerned. The number of men employed in a particular factory, their length of working-day and the output of the factory are shown to be related to the scales of valuation of the consumers of the good that it manufactures, to the scales of the members of the board of directors and of the workmen concerned.

If we were to examine the matter further, we might find that the scales of valuations of each individual in any of these classes could be correlated with various other phenomena. The consumer's valuations might be found to be related to his native constitution, physiological and psychological, to the kind of house in which he lived or to his family circumstances. And the firm's output of the commodity would certainly depend on the existing state of technology, *e.g.*, on the existing knowledge of Chemistry. Other branches of Economics or other branches of science may examine the influence exerted by technology on the output of the firm, or the influence of family circumstances on the schedule of preferences of the consumer, but Economic Science itself does not do so. It does not inquire by what events in the realm of fact these preference schedules have come to be what they are.

So also it would be possible to relate the structure of a country's industry, the scale of its engineering, shipbuilding or cotton industries, to the deposits of minerals in it, its climate or its geographical position; and all of this would be enormously important, quite vital, indeed, for an understanding of the country's position. The student of Economics who was without this knowledge would be like the physicist who was born with a knowledge of Einstein's theory but had never had the advantage of walking over fields or seeing tides or measuring a table with a yardstick. It is quite safely assumed that the physicist studying Relativity has in fact measured tables and has seen electric cells and resistances and the other paraphernalia of his science, and that the student of Economics is acquainted with the importance that the existence of coal deposits or the possession a seaboard has for a country's economy. These effects are a proper subject of study, but this part of the study would belong to Descriptive Economics or other branches, and not to Economic Science itself.

The position of Political Science is exactly similar. Political Science, too, accepts the scales of valuation of the individuals concerned as being among the *data* of its problem. A knowledge of the economic system of the country, of its racial composition, its political and social traditions, its complicated political history, would be necessary to an understanding of its political system. But such topics as these would fall within the discussion of other branches of Politics, not of Political Science itself. This is a hard saying. Only the student familiar with the methods of reasoning of the various sciences would agree that the Science of Politics should accept as its *data* the scales of preferences of individuals. Yet it is so.

6. Consideration of technology lies outside Economic Science as it does outside Political Science, but the technological facts, so far as they are known from the past or guessed at for the future, play their part in the formation of the individual's scales of preferences. Here the issues which arise are not obvious, and we may examine them further.

In economics some of the technological facts are definitely known by the people concerned. The effect of combining specified quantities of iron and coal in producing steel are known from the numerous instances of this which have occurred in the past. The manner in which it is possible to produce a steel plate using different kinds of machinery and different quantities of labour and raw materials can be accurately stated. As a result of the numerous experiments and accumulated experience of the past, the technical possibilities entailed in the production process are often known beyond cavil. So long as we confine ourselves to the realm of the purely technical, the possibilities which are open, and from which one must be selected, will often be definitely enough known to all.

In politics there is rarely or never this measure of agreement. Facts rarely or never recur in the exact form which they had in the past. The ingredients in the situation are usually different, or combined in different proportion from what they were in the past. Taking a simple illustration, if a college curriculum is being revised by a committee, the members will have before their minds a knowledge of past curricula of this and other colleges with which they have been acquainted, but some will have been acquainted with some curricula, others with others; the experience on the basis of which they are choosing will be different for the various members. The committee member who has had the opportunity of witnessing each of two curricula in operation may even be uncertain as to what the effects of one have been by comparison with the other. The effects of political adjustments cannot be specified in terms of lbs. weight, and rarely can be specified definitely in terms of £s of profit or loss or other numerical measures. The individual is left to read general effects as well as he can, when often they are of a type which is difficult to observe correctly, and rarely will he feel that he knows accurately what they have been. When he tries to communicate such knowledge as he has to others, he is unlikely to succeed beyond the first few steps; he cannot specify effects in numerical terms, and his listeners, relying on their own experience of similar instances, may believe that his reading of experience has been mistaken. Beyond that, the milieu in which any proposed changes have to be introduced will be different from the old; and the old ingredients in a new medium might give rise to different effects from those of the past, even if it had been possible to specify these effects correctly and in a way which was accepted as true by all. The facts of political technology, therefore, are much more elusive and less knowable than some of the facts of economic technology.

7. But the line of demarcation between Politics and Economics is not hard and fast. In economics, too, some facts are difficult to specify and can only be guessed at. If, for example, the proposal is to establish a factory to manufacture a certain good, the costs of manufacture, the quantity of sales and the price of the product will all be uncertain; and if it is a joint enterprise to be undertaken by several people, each person concerned will entertain a different expectation of the outcome, the view taken by each being dependent on his past experience, his intellectual or imaginative abilities and on the degree of optimism of his temperament. The facts lie in the future and must be guessed at: many events which will be of vital importance to the success of the enterprise can only be visualised dimly, if at all. Each person must exercise his choice in a realm in which he can have an opinion as to what the alternatives are as between which he can choose, but he has no definite knowledge of these alternatives. While, therefore, there is often a greater certitude attaching to economic judgments than to political, this is not always the case. There is a difference in the degree of knowledge of the outcome of the various lines of action which might be chosen, this knowledge often being greater in economics than in politics; but there is no difference in principle between the economic and political estimates which people must make. Technological factors play the same role in the formation of preference schedules in both economic and political choice; and both Economics and Politics leave these

factors to be discussed outside the pure science which deals with the subject. In either case, for the pure science it is enough that we represent the individual by his schedule of preferences.

8. Apart from the schedule of preferences, the other main instrument in the two sciences is the conception of equilibrium.

In Economics, from the time of Adam Smith onwards, the question asked has been : What are the characteristics of economic equilibrium in the particular case concerned ? Even in asking the question which the science is an attempt to answer, it is presupposed that a concept of equilibrium has been, or can be, found.

In Politics the question which should be asked, so far as I can see, is : What are the characteristics of political equilibrium in particular cases ? Or, more exactly : What characteristics of political adjustment can be formulated in terms of a theory of relative valuation and in terms of a concept of equilibrium ? If this really is the problem with which the science is concerned, it becomes apparent that the whole nature of Political Science derives from the question asked. But this question is only a minor modification of that asked by Economics ; and the answer to it would plainly be the same in kind as that given by Economics. To the extent that we accept this as a satisfactory statement of the problem with which Politics deals, we will expect Political Science and Economic Science to share a common nature ; for the nature of a science is predetermined by the question to which it is an answer, and both Politics and Economics seek to answer practically the same question.

9. It might, of course, have been true that the conceptions of equilibrium in the two sciences were significantly different. After all, equilibrium in Physics or Chemistry means something very different from what it does in Economics.

Let us examine the matter. In Economics, although the conception has been differently treated by different authors, always the underlying idea has been that equilibrium results from the equality of demand and supply.

In Political Science the motions before a committee stand in some definite order on the scales of preferences of the members. Equilibrium will be reached through one motion being selected as the decision of the committee by means of voting. The impelling force towards having one particular motion selected will be the degree to which the members' schedules, taken as a group, rank it higher than the others. The barriers to its selection will be of two kinds. On the one hand, there is the degree to which the group ranks other motions as high as, or higher than, the motion concerned. And on the other, there is the particular form of committee procedure in use; and it can be shown that with a given group of schedules, one procedure will select one motion, while another procedure will select another.[1] If so, equilibrium in Politics is "the resultant of tastes and obstacles"; and these are the words Pareto used of equilibrium in Economics.

Thus each science uses a different definition of equilibrium; but the underlying conceptions are the same in kind. The position is that we get from the one science to the other by the change of a single definition.

10. This provides us with a criterion to distinguish between economic and political material. If the pure theory appropriate to the case makes use of preference schedules, the phenomena will be either economic or political. If the definition of equilibrium employed relates to equality of demand and supply, the phenomena will be economic in nature; if it relates to equilibrium attained by means of voting, they will be political.

11. In both sciences the fundamental requisite is to give an account of the relations which, *in conditions of equilibrium*, necessarily hold between the elements; and in both the most general type of theory would be formulated in terms of Mathematics. This has its disadvantages,[2] but it is only by mathematical logic that we are able to deal with a number of interdependent variables, each influencing and being influenced by the others. To begin with, however, progress in the formation of a Science of Politics is likely to take the form of a number of studies in "partial analysis." This would employ only two or three variables, and would be expressible in terms of Geometry.

12. As in Economics, it would be possible, at least in principle, to fit *data* from actual situations to the theory obtained; and correspondence of the conclusions of the theory with political reality could be tested for empirically.

13. The pure theory would enable us to work out the effects

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[1] Cf. Black, *op. cit.*, *Econometrica*, July 1948, pp. 256–7 and 261. My articles "The Election of Candidates in Single-Member Constituencies" and "Some Theoretical Schemes of Proportional Representation," *Canadian Journal of Economics and Political Science*, May and August 1949, are elaborations of the statement.

[2] Apart from the difficulty of understanding Mathematics, which everyone feels and some people feel acutely, there is the drawback that much of the existing Mathematics was developed to deal with physical problems and is not well adapted to deal with the human sciences. In time a new Mathematics will be invented. Cf. Hans Mayer, "Der Erkenntniswert der funktionellen Preistheorien," *Die Wirtschaftstheorie der Gegenwart*, Vol. II.

of any given change in the political circumstances. The initial state of equilibrium, before the change was introduced, would be examined, and when the *data* had been altered so as to incorporate the given change, the new state of equilibrium would be examined. The set of differences between these two states of equilibrium would give the effects of the assumed political change. Here, it must be added, the effects of any given change might be very different according to the context into which it had been introduced. Sometimes a small change in the *data* might give rise to far-reaching changes in the final state of equilibrium; at other times a considerable change in the *data* could be introduced with little or no effect on the resulting equilibrium. The method by which the effects of such political changes would be traced is that familiar in Economics as the method of comparative statics.[1]

14. Reasoning throughout both sciences, therefore, seems to me to be nothing short of identical in kind, and we draw the conclusion that Economics and Politics really form two branches of the same subject. Each relates to choosing of some kind, and it might seem that a suitable title for the subject that includes both would be the Theory of Choices; but if such a title were used, too much would be brought under it: Ethics, in one aspect, is a theory of choice, and the Theory of Permutations and part of the Theory of Probability is again a theory of choice. On these grounds it would seem preferable to refer to the wider subject, which includes both Economics and Politics, as being the Theory of Economic and Political Choices.

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[1] In this article we make no attempt to deal with the relationship of an Applied Politics to a Pure Politics. The problems which arise are of a different order from those dealt with here and would require a separate treatment.

EMPIRICAL RESEARCH AND THE MARGINAL ANALYSIS

THIS paper attempts to solve an apparent hopeless contradiction between economic theory and practice. In theory marginal cost (m.c.) always equals marginal revenue (m.r.). In practice it never does. I hope to show that the several difficulties are only apparent.

1. *Definitions.* Costs or factors of production (hereafter called simply "factors") may be classified into the following pairs :

> (*a*) *Variable and fixed,*[1] the fixed factors being those which within some arbitrary period of time cannot be varied. This distinction is identical to that between partial and total adaptation (p.a. and t.a.).[2] We shall call the marginal cost of one more unit of product m.c. (t.a.) and m.c. (p.a.) according as the fixed factors are changed in order to produce it or not, respectively.
>
> (*b*) *Long and short run.* This is not the same as the fixed/variable distinction, for it is not necessary that fixed factors be altered, or indeed that alterations in them be considered, in the long run. In the long run (l.r.) it is possible for the cost of a certain combination of factors to be greater than it is in the short run (s.r.) : for instance, machinery can be worked very profitably in the s.r. without maintenance, but in the l.r. the costs of this procedure are very high. There are really two distinctions here : a course of action may involve no disadvantages if pursued for a short period only, but be very expensive if persistently pursued, and such a case is the overworking of machinery; or there may be delayed effects of even short once-for-all actions which raise their real cost. For instance, to demand overtime of the workers one evening without warning may have no effect at the time, but result in a strike much later. But the main point is that l.r. decisions

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[1] The distinction drawn by Mr. P. Lyle (*Regression Analysis of Production Costs*, p. 80) between "overheads" meaning office expenses and "factory fixed costs" meaning plant, etc., is not used here. Mr. Lyle's factory fixed costs are a distinctly curious concept, as they include the cost of power. Cf. National Bureau of Economic Research (N.B.E.R.), *Cost Behaviour and Price Policy*, pp. 54–7. There is, of course, no connection between fixed costs and rigid costs.

[2] Partielle and totale Anpassung. E. Schneider, *Theorie de Production*, ch. 2, sec. 2.

do not necessarily affect fixed factors, and that divergences between l.r. and s.r. costs and revenue can occur without any alteration in the fixed factors occurring. S.r.m.c., then, is not the same as m.c. (p.a.), as in most formulations. There is an s.r.m.c. (p.a.) and an l.r.m.c. (p.a.) according as the ultimate disadvantages of overworking the machinery, etc., are neglected or taken into account. There is also an l.r.m.c. (t.a.), but the concept s.r.m.c. (t.a.) appears to be empty of meaning. It is of the utmost importance for this analysis that the p.a./t.a. distinction is not the same as the s.r./l.r. distinction. It is on this very simple addition to the "tools" of economics that much of the reconciliation of theory and practice depends.

(c) *Direct and overhead.* The distinction between these is a mere accounting convenience, those costs being called direct which accountants succeed in dividing in different proportions between the units of output according to how they suppose each unit "causes" the cost; while overheads are the remaining costs which are lumped together and spread by some rule of thumb. Thus the use of a crane in an engineering workshop could be accurately costed so that only heavy articles actually requiring its use made any contribution to its upkeep; but it might be more economic to sack the accountant concerned and spread the charge arbitrarily. A good, or an officious, accountant could make almost every cost direct; a small shopkeeper, who has neither the time nor the intellectual capacity nor the need for such elaboration, calls every cost an overhead except the simple invoice cost of the articles he sells. Very commonly, both among economists and in real life, "direct" and "overhead" mean the same as variable and fixed, and there is no simple expression corresponding to the distinction made by the accountant's arbitrary practices. From this follows the tendency to confuse the accountant's distinction with the real one. The meanings assigned to "direct" and "overhead" here are idiosyncratic, but I think useful. Had Mr. Lyle distinguished "overhead" from "fixed" he would not have called power a fixed cost.

(d) As to marginal cost, m.c. (p.a.) then differs from total variable cost in that it excludes those factors which although variable are not immediately relevant to producing more or less. Thus it is possible quickly to sack a typist in the head office, but it is of no assistance in decreasing production by

> one unit: she is not therefore a marginal cost (p.a.). M.c. (p.a.) covers those factors which within the arbitrary fixed period must be taken on (may be sacked) in order to produce more (less). M.c. (t.a.) covers all factors including those factors like typists which under p.a. are non-marginal, though they can be immediately hired or fired.

All these pairs of distinctions are, of course, more or less arbitrary. In particular, (*a*) and (*b*) depend upon an arbitrarily chosen, notional period of time.

2. *The facts.* (*a*) The *full cost principle* arises out of the first recorded attempt by economists to abandon speculation and conscientiously seek for the facts about price fixing. Research is still quite incomplete, and the results do not rest upon conclusive evidence and may be disputed.[1] Nevertheless, my understanding of them, helped out in some cases with common-sense assumptions, is as follows. S.r.m.c. (p.a.) is an *average* concept to the entrepreneur, who is not normally concerned with rises or falls in it. The reason for this is that the average is pretty constant in practice, so that no distinction between marginal variable cost and average variable cost really arises. The alternative name proportional cost shows this well—variable cost is thought to be (linearly) proportional to output. Fixed costs are, of course, by definition constant under p.a., and have merely to be borne by more or fewer units of output. Therefore there is nearly always decreasing average total cost under p.a. Therefore s.r.m.c. (p.a.) $<$ s.r.a.c. (p.a.).[2]

But is it really true that s.r.m.c. (p.a.) never rises? Both common sense and evidence show that it is not, but objectors to the full cost principle fail to see that the undoubted fact of ultimately rising s.r.m.c. (p.a.) is almost irrelevant to price fixation. Although it is obviously *possible* to produce enough to make s.r.m.c. (p.a.) rise, it is never profitable because the l.r. cost of doing so is prohibitive. The course of the s.r. cost curves with p.a. is normally that of Fig. 1. The s.r.m.c. (p.a.) curve is either quite flat or falls[1] a little at first and then goes flat or gently upwards for a long stretch. Finally, it turns sharply upwards; this represents the cost of overtime, improvised methods of overcoming bottlenecks, emergency purchases of raw material, etc.[2] The s.r.a.c. (p.a.) curve falls steeply and then flattens out into a gentle decline, and is more or less asymptotic to but always above s.r.m.c. until the latter's sharp upturn. Planned production lies somewhere along the stretch of flat s.r.m.c. (p.a.), say at *X*, and this is the optimum *long run* use of the plant.[3] If now achieved production exceeds planned production, or capacity, the firm will still in all probability be on this stretch, and will benefit by having a.c. lower than expected (because it has spread its overheads). But in the long run this situation is uneconomical, for it implies persistently producing at a point where the factors are not in an l.r. least-cost combination. Now this is at first sight strange : for surely the least-cost combination is not in fact at *X* but at *Y*, where average cost is lowest ? But this is not so, for two reasons. First, s.r.m.c. (p.a.) is rising sharply at *Y*, due to overtime, overloading of plant, emergency extra purchases, overstrain of managerial staff, possibly even the use of manual labour to supplement mechanised bottlenecks, etc. And these things cost more in the long run than in the short (assuming always p.a.), for eventually they mean extra maintenance, loss of goodwill, labour unrest, etc. So all production under rising

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[1] Supporters of the orthodox marginal analysis must, however, do more than merely show the *unreliability* of the full-cost evidence. They must show it to be actually wrong, and that their own theory, out of all other conceivable ones, is actually right. So far I am aware of no evidence whatever for the marginal analysis.

[2] Evidence for this paragraph: C. Saxton, *Economics of Price Determination*, ch. 6; P. W. S. Andrews, *Manufacturing Business*, ch. 3; P. Lyle, *op. cit.*, p. 109; J. Dean, *American Economic Review* (Papers and Proceedings 1948), p. 160; and the lists of studies quoted by H. Apel, *American Economic Review*, December 1948, N.B.E.R., *op. cit.*, pp. 90–109.

The break-even chart taught in American schools of business, and used by certain firms, is also good evidence (cf. Dean, *ibid.*; N.B.E.R., *op. cit.*, pp. 102–9). The total cost line on this chart is normally linear, implying constant marginal cost (see Fig. 6).

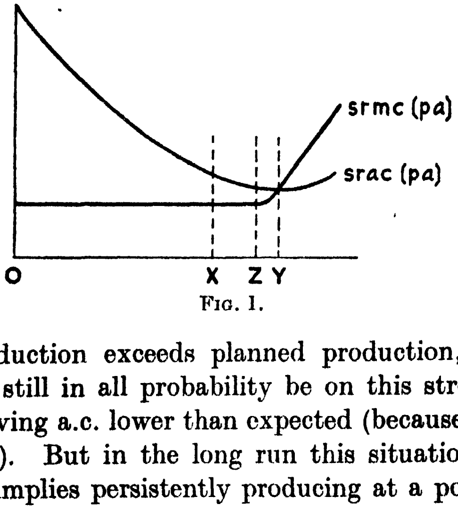

FIG. 1.

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[1] There is evidence for both possibilities—Lester, *American Economic Review*, March 1949, pp. 478–9. Cf. Saxton, *op. cit.*, ch. 6 and p. 163.

[2] Including the over use of fixed factors—a rather special case to which we shall return, as it requires elaboration.

[3] The word "capacity" is used in this article of this output, and not of the maximum output possible; and this is also occasionally the wage of business

s.r.m.c. (p.a.) is inefficient, and the management will try to avoid it. Secondly, there is no backlash, no play, at *Y*. A breakdown, a sudden demand from a valuable customer, the loss of a consignment of raw materials, a strike or the like will be crippling at *Y*, for it cannot be made up later. We are in the now all too familiar situation of the over-fully employed economy, which has no reserves and is liable to bottlenecks. This also accounts for the fact that not only is it uneconomic to produce under rising s.r.m.c. (p.a.), but also it is uneconomic to exceed output *OX* for long: say to try to keep up *OZ* for any period. For *OZ*, despite the fact that it does not entail rising s.r.m.c. (p.a.), means that maintenance cannot be normally carried out, that machinery is always in use that ought to be in reserve, possibly that overtime is being worked continuously (labour may welcome occasional overtime, but jibs at its perpetuation). It also means a larger value of stocks and work in progress than the capital of the firm can carry for ever without financial risk.[1] For the position of *X* is *defined* by this second objection : *OX* is the maximum output at which it is possible to establish reasonable reserves of labour, time, finance and materials against accidents. *OZ* would be ideal if it were not for the cussedness of things, and for short periods we like to be producing it, as it does not actually overstrain us like *OY*. But in the long run we shall surely regret it, and must either enlarge the plant or produce *OX*. Indeed, the firm will have *designed* the plant so as to obtain constant s.r.m.c. (p.a.) over the relevant stretch.[2]

Two exceptions may be expected. The first is that we may find even output *OY*, and outputs greater still, in periods of exceptionally high prices not expected to last. For the l.r. damage done is compensated by the s.r. profits made; but it is not worth while expanding the plant. The second is that with certain complicated systems of allocating depreciation allowances more is assigned *per unit of product* as output rises, thus taking account of the greater wear and tear on the fixed factors as output rises, for this entails working the machinery at greater speed. In such cases total depreciation is divided into: (*a*) a fixed amount representing the effects of obsolescence and the wear and tear caused merely by the passage of time, and (*b*) a variable amount representing the wear and tear due to use. As output rises (*a*) expressed as a rate per unit naturally falls, but (*b*) may rise, in order to represent the greater wear and tear per unit of production due to increased speed of running the machinery and cognate causes. When these two elements move in opposite directions, then the total rate of depreciation per unit may either rise or fall with output. Now while (*a*) is not part of s.r.m.c. (p.a.) at all, it seems most convenient to use such definitions as will bring (*b*) in. For a factor of production is fixed only in so far as it is unaffected by this or that s.r. alteration; in so far as it is affected it is not fixed. The element (*b*) in depreciation, then, is for costing purposes an s.r. marginal cost under p.a., though the actual payment of it is postponable. If his accountant has adopted such a method of allocating depreciation charges, the entrepreneur's s.r. decisions will be influenced by (*b*), and he behaves rationally in giving it weight. If (*b*) rises with the rate of output (as it usually should) there will be rising s.r.m.c. (p.a.). But it is, of course, most unlikely that the *rate* of rise will be enough to render Fig. 1 seriously inaccurate in the region of point X.[1] Depreciation is in reality a very small part of value added—say about 4% in industry as a whole[2]—so that alterations in it must be of negligible importance.

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[1] A point especially important for banking and the distributive trade. Banks, too, observe the full cost principle, and the chief reason for them is the divergence between the s.r. and the l.r. cost of lending caused by the risks of illiquidity. But all firms in all trades have a liquidity ratio, and not only banks, as we tend to suppose.

[2] For general confirmation of this paragraph, cf. P. W. S. Andrews, *op. cit.*, ch. 3.

For the habit of planning for a certain level of output with given plant, cf. N.B.E.R., *op. cit.*, pp. 25–6; J. M. Stigler, *Journal of Political Economy*, 1939.

For the continuing fall of average cost after *OX*, or "capacity," cf. Lester, *op. cit.*, p. 482.

So s.r.m.c. (p.a.) is ordinarily < s.r.a.c. (p.a.). But firms ordinarily avoid bankruptcy. Therefore s.r.m.c. (p.a.) is ordinarily < price. So far, however, the facts can be regarded merely as an interesting verification of imperfect competition theory. They are so regarded by Machlup.[3] Of course m.c. < price, he says, for ordinarily there is imperfect competition, and m.r. also < price. Naturally m.c. = m.r. at a point below a.c. and price, and all is well.

Alas for *a priori* reasoning! the facts are quite otherwise. First, perfect competition *in the sense of perfectly elastic demand*

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[1] Cf. N.B.E.R., *op. cit.*, ch. 4; J. M. Keynes, *General Theory*, ch. 6 (appx.); E. Schneider, *Einführung in die Wirtschaftstheorie*, vol. 1, ch. II/3/i (4).

Note that if this increase in wear and tear is not so allowed for in the depreciation account it may still influence entrepreneurial decision, and will then in our jargon be a divergence between s.r.m.c. (p.a.) and l.r.m.c. (p.a.); see sec. 3b.

[2] H. W. Arndt, *Oxford Economic Papers*, November 1947. The figure refers to Great Britain. In U.S.A. it is about 7%.

[3] F. Machlup, *American Economic Review*, 1946.

(which is the only sense relevant here) is by no means uncommon. Perfectly elastic demand' curves face small firms in industries where their large rivals exercise price leadership; they face firms producing for the government; they face farmers and miners of precious and non-ferrous metals; they face firms in cartels or subject to gentlemen's agreements; they face the producers of some standardised intermediate products, such as cotton yarn. In all these cases demand, though variable, is *always* perfectly elastic to the firm; *i.e.*, price = m.r. in both s.r. and l.r., whatever the reigning level of that price may be. The only qualification is that in some of the above cases there is an absolute stop to the demand curve at a certain point, *i.e.*, where the production quota is fulfilled. Such quotas reign in government contracts and in some (but only some) cartels, giving to m.r. and a.r. the shapes in Fig. 2. But this fact is not sufficient to disprove the common occurrence of perfectly elastic l.r. and s.r. demand to the individual firm. Yet empirical research into cost data and price fixing shows no difference at all between firms faced with such demand curves and others. Both classes produce at the optimum point X shown in Fig. 1, and the elasticity of demand, though relevant to the setting of the price, is not considered relevant to the choice of X as the best possible output.[1]

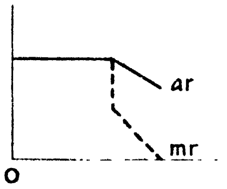

FIG. 2.

A second and even more damaging fact is that even when the l.r. elasticity of demand facing the individual firm $<\infty$ the entrepreneur, nevertheless, of his own free will ensures that the s.r. elasticity shall $=\infty$. In other words, in all cases where he enjoys some (l.r.) control over his price he makes it as sticky as possible. Why is this? First, s.r. price changes are simply impracticable for accounting and production planning. Secondly, in the s.r. a price cut brings in few customers that would not have bought anyway, and makes the regular customers suspicious: it also gives offence to those who buy shortly after the cut. Thirdly, an s.r. price rise loses good will and is bad in the l.r. Fourthly, a period of constant prices is necessary for the estimation of demand, as very short periods are swamped by random fluctuations. So what the entrepreneur normally does is fix a price for the "season" and await customers. If he sells much he will raise the price next season, and if little he will lower it. But he very seldom changes during his season.[1] Finally, as he is uncertain about the elasticity of demand he does not know whether it would be better to raise or lower his price. This uncertainty makes the convenience of leaving it alone bulk larger in his mind.

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[1] I have little direct evidence for this statement, and rely mainly on common sense, and the entire absence in any of the sources quoted above of any connection between demand curves and s.r. output policy.

Nor is the case of contracting any better. For a contract *ex definitione* involves a fixed quantity and price over a period of time. There is no such thing as a short-run analysis of contracts, and they afford no comfort to those who maintain s.r.m.r. $=$ s.r.m.c. (p.a.).

These then are the alternatives. Either price is not controlled by the entrepreneur, in which case s.r.m.r. $=$ s.r.a.r. Or price can be controlled, in which case, nevertheless, s.r.m.r. $\doteq$ s.r.a.r. for reasons of necessity and convenience to the entrepreneur. Or there is a contract price, in which case the s.r. cannot be spoken of at all. Yet in any case, irrespective of s.r. demand conditions, a level of output is aimed at at which s.r.m.c. (p.a.) $<$ s.r.a.c. (p.a.). Yet losses are exceptional. Therefore s.r.a.c. (p.a.) is normally $<$ s.r.a.r. Therefore s.r.m.c. (p.a.) $<$ s.r.m.r. in the normal case—much less. Even if s.r.m.r. were $<$ s.r.a.r. it would still need to be shown that it was in fact equal to s.r.m.c. (p.a.) at the point X.

The above paragraphs sum up what I mean by the full cost principle.[2] The so-called mark-up principle is not independent of it, but merely its simplest possible variant. It is the principle used in the wholesale and retail trades and in the vertically disintegrated sections of the textile industries, and consists of making price a fixed percentage above the cost of the raw material. This percentage is called the margin. The mark-up principle is a failure to allocate costs as direct when they might be (shop space, spinners' labour, etc.), owing to either bad or non-existent accounting, which is frequent in these industries, or a perfectly rational refusal to spend money on accounting. One main cost (stock to be sold, raw cotton, tops, etc.) is treated as direct, and all the rest is overhead.

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[1] Cf. Gordon, *American Economic Review*, June 1948, p. 277; Saxton: *op. cit.*, pp. 127–9.

The break-even analysis is evidence for this too. The sceptical reader may also confirm the fact experimentally by entering any shop; or by buying a price catalogue. The break-even analysis also assumes constant s.r. prices, and it is used by many firms; cf. Dean, *op. cit.*

Objections have been raised to calling this phenomenon of sticky prices a perfectly elastic s.r. demand curve. If it eases the reader's mind he may refer to it as a sales or revenue curve. The main point is that this curve is the one on which entrepreneurial s.r. decisions are based, and it is perfectly elastic. A rose by any other name . . .

[2] General evidence for the universal use of the full-cost principle, apart from the detailed direct evidence quoted above, is deducible from any text-book on accounting. Accountants work this principle at every point, both in their apprenticeship and in their subsequent careers.

3(*a*) How is all this compatible with profit maximisation? Note, first, that one can be in equilibrium with respect to (t.a.) and (p.a.) at the same time, although the curves run differently from each other. Both sorts of curve exist at the same time, the one sort governing investment decisions, the other governing other decisions. One can also be in equilibrium (p.a.) but in disequilibrium (t.a.), and vice versa. That the curves differ merely describes the fact that the data on which the decisions are taken differ. The fact of this coexistence of different data is one of the key points of my analysis. Obvious enough, it has nevertheless not been made enough of in the past.

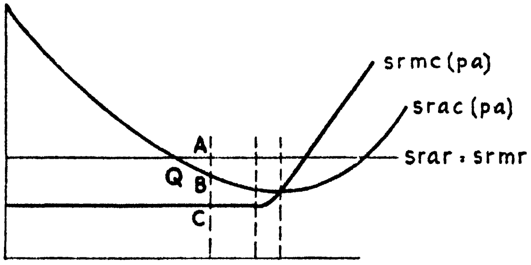

Fig. 3.

The normal s.r. position (p.a.) has already been described. We need but add a horizontal sales curve to Fig. 1 and there is the answer. Fig. 4 shows a *plant* producing at its l.r. optimum (*OX*) for a given fixed equipment, and enjoying unit "abnormal" profits *ab*.

Up to the point *OY* Fig. 3 is simply a translation into averages of the break-even diagram used by many firms and taught in schools of business (Fig. 4). Which circumstance fully confirms its validity. The point *Q* in each figure is the break-even point which must be exceeded if a profit is to be made. Both figures show a perfectly elastic demand curve and constant marginal cost. Fig. 4 can be reproached, however, for its failure to make the total-cost curve bend upwards at a point corresponding to *OZ* in Fig. 3, as failure equivalent to the assumption of *indefinitely* constant s.r.m.c. This is absurd. At this point the economist may justly claim to have suggested an improvement in business practice.

The plant in Figs. 4 and 5 is not in equilibrium if by that we mean that s.r.m.c. (p.a.) = s.r.m.r. But it mightly easily be in equilibrium in that, granted p.a., it is maximising its l.r. profits; *i.e.*, it is doing the best it can for itself with its *given* equipment. How shall we then express this in our jargon? The answer to this question is, I believe, the kernel of the solution of the full cost mystery suggested here. *The plant is equating l.r.m.c. (p.a.) with l.r.m.r.* L.r.m.c. (p.a.) runs quite differently from s.r.m.c. (p.a.) and from l.r.m.c. (t.a.) and l.r.m.r. diverges from s.r.m.r. as we have already seen. *By definition* these two quantities are equal. *Necessarily* therefore the marginal curves cut at output *OX*, and the orthodox marginal analysis is in a certain sense saved. L.r.m.c. (p.a.), which allows for all the ultimate results of overloading machinery, etc., rises very sharply in the neighbourhood of *X*, so that even quite large changes in demand, such as those shown in the accompanying figure from demand situation 1 to demand situation 2, make little difference

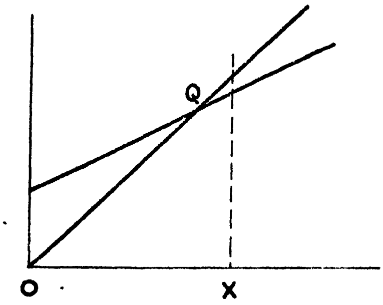

FIG. 4.

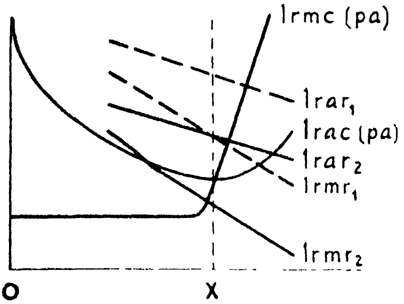

FIG. 5.

to output. In many cases l.r.m.c. (p.a.) is doubtless quite vertical at X.

Thus from the point at which it begins to rise it diverges sharply from s.r.m.c. (p.a.), which does not begin to rise until some time after X. But as we approach the left-hand vertical axis—that is when output is small—they tend more and more to coincide. For there is little reason why they should differ if the plant and other factors are not being overstrained. In the s.r. under-capacity working leads to ca'canny on the workers' part,[1] but if the situation persists and employment is as high outside the plant as before they will habituate themselves to the situation. On the other hand, in the s.r. certain maintenance tasks on the disused capacity can be neglected that in the l.r. cannot. But none of this amounts to very much. But when there is over-capacity there are reasons enough for a divergence between l.r. and s.r.m.c. (p.a.) : as we saw in sec. 2 overtime, overloading of plant, badgering one's suppliers, overstrain of managerial staff all cost more in the long run than the short. Another l.r. disadvantage of over-capacity working is more difficult to allocate between costs and revenue. If there is no reserve capacity the rush orders of old clients cannot be satisfied. But they may only deal with us on the basis that a reasonable number of emergency claims *will* be met. Then our habitual over-capacity working loses us our best customers. This item may be regarded as either raising costs (for it costs a lot to fulfil the orders) or lowering revenue (for we lose the custom). Another sort of divergence is also relevant here, although it presents no distinction, strictly speaking, between l.r. and s.r. It is the divergence between those costs which the entrepreneur calculates and puts into his break-even diagram (if any) and those which although he might he does not take account of in this way. Such a cost is that of overtime, which is often simply left out when costing exceptional production, labour cost being entered at the usual rate.[2] Another is extra wear and tear due to fast running, which as we saw is only included by rather advanced accountants.[3] By deliberately omitting such factors from their break-even diagrams (or from the virtual break-even analysis carried on by those who do not actually draw diagrams) when they could be inserted, entrepreneurs seem to act with a positive bias against the marginal analysis ! For of course were they included the break-even diagram would much more closely resemble the orthodox one. However, they are very often not included, but nevertheless are given weight in making decisions. Since I am here trying to reserve s.r.m.c. (p.a.) for the explicit calculations of the entrepreneur, and l.r.m.c. (p.a.) for the description of the fact that he really maximises his profits all the same, these items must also be counted as part of the one but not of the other, and as constituents of the divergence between them. Though it is freely admitted they are in no proper sense l.r. as opposed to s.r. factors.

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[1] Lester, *op. cit.*, p. 479. And personal information from entrepreneurs.

[2] P. W. S. Andrews, *op. cit.*, p. 110. The divergence thus corresponds to Mr. Andrews' "extraordinary costs."

[3] Sec. 2.

(*c*) If this is then our solution[1] what right have we to belabour the orthodox analysis for its neglect of s.r.a.c. and s.r.m.c. (p.a.) and of s.r.m.r. and s.r.a.r.? If the whole thing can be quite rationally explained by the comforting and familiar diagram of Fig. 5 why bother with Fig. 3? Is it not rightly neglected as a mere uncomprehending distraction brought on by purely descriptive economists who refuse to think analytically? The answer is in the negative. For not only do all business men and accountants think in terms of Fig. 4, but also it is only for this sort of figure that workable statistics are or ever will be available. Long-run costs (p.a.) and (t.a.), like long-run revenue, are scarcely operative concepts at all. The haziest guesses are the best information we shall have of them, even in a fully planned economy with uncertainty as far as possible removed. In particular, l.r.m.c. (p.a.) is as yet unsupported by any direct evidence whatsoever. It is a concept deduced from entrepreneurial behaviour, and has no other right to exist. Not only then if we want to understand how business decisions are taken and how accountants work, but also if we want to understand the results of empirical research, must we use the full cost principle.[2] The correct place for Figs. 6 and 7, and the analysis that is implied in them, is welfare economics. When we wish to describe how the free market does or does not conduce to the general good; when we praise or condemn the use of a pricing system under socialism—then is the time for the orthodox, naïve, *a priori* analysis. In such cases the full cost principle is a positive hindrance, for the concepts in which it deals, though precise and commonplace enough, are irrelevant. The relevant concepts are then the more recondite but less observable ones of the armchair economist.

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[1] Part of this solution is adumbrated by Gordon, *op. cit.*, pp. 279–82. Professor Gordon's article is the most penetrating and most balanced paper on the whole controversy known to me.

[2] For instance, it is this principle and its associated diagrams that are relevant to the formal incidence of taxes, to governmental price control and to most of the controversy about depreciation allowances.

(*d*) Let it be emphasised again that the maximisation of profit, whether l.r. or s.r., is not the invariable aim of the entrepreneur. In many cases he is content simply to cover his costs, for the rest pursuing some non-economic aim, such as technical perfection or the maintenance of tradition. In such cases he will still think in full cost terms, although the marginal analysis will no longer be applicable to what he does. The full cost principle is compatible with many kinds of entrepreneurial motivation, and is applied in all sorts of circumstances. My object has been simply to show how it is *compatible* with profit maximisation. The full cost principle does not itself explain anything, but rather itself requires an explanation. It is not by itself a new theory of value, or of the firm. All it tells is how, at no very determinate output, costs are fully covered, by no very determinate margin. This is of course not enough, and the commonest determinants to add to the picture are those of profit maximisation.

And why *is* the full cost principle used? Partly, as we have seen, because many of us are not interested in maximising profits, but none of us want to make a loss. The principle at least guards us against that. Partly because the doctrine of the just price lingers on. The diagram of the intra-marginal firm, with its m.c. well above a.c. and the difference representing abnormal profit, would seem the grossest profiteering to the ordinary business man. Partly because business men, despite their attachment to the "laws of supply and demand," believe in a labour or cost theory of value. They view price as built up out of costs. And so within limits it is; if the price is at all under the control of the firm there is a range of tolerance within which the price can be altered to correspond to cost changes, without affecting the market. And this is particularly so if, as is so common, the cost change is shared by all competitors. So accustomed are entrepreneurs to making these small changes in price, to "passing on higher costs to the consumer," or to "giving the consumer the benefit of lower costs," that they believe in a vague way costs uniquely determine prices.[1]

But the most powerful reason of all is that the *full cost principle utilises the data the run-of-the-mill accountant provides.* The trading account and the profit and loss account give us, for legal and financial purposes, and so that we may determine our

[1] Cf. J. M. Clark, *Economics of Overhead Costs*, ch. 11. I owe this section to Prof. Clark's admirable chapter. It gives the completest survey of the full cost controversy before that controversy ever became conscious.

profits, the bill for this item and the cost of that, *ex post.* What more natural than to divide these accounts by the quantity of output? Does not this give us the "cost" of a unit of output? Full cost = year's accounts ÷ year's production. Accountants do not normally study variations in output, or what *would* happen *if*: they *record* successive achievements. And this is not surprising, as their function is to determine legal profits and prevent peculation. Even cost accountants, the upstarts of the inter-war period, did little but more detailed analyses, embodying technical knowledge, on the same lines. Accounting is a conservative profession. Only since this war have accountants really begun to bother with marginal cost, with *ex ante* analysis, with helping the entrepreneur to maximise his profits. For this purpose they themselves reject the full cost principle. It is to the curious rigidity of the accounting conventions of modern industry that we owe the survival into the twentieth century of the full cost principle. Not indeed that it could ever be altogether dispensed with, for alternative data will always be lacking, but its hold on the business mind is too great for health.

To repeat. We may speak of the divergence between the l.r. and s.r. costs of producing a certain output *with given capital equipment.* And we may also compare the (l.r.) cost of producing a certain output after adapting the capital equipment with either or both of the above. The third and the second concept have been long well known as l.r. and s.r. costs. It is the first that is new. On the revenue side there is nothing new, as there is no distinction to be drawn between a p.a./t.a. couple and an s.r./l.r. couple. L.r. revenue, which is s.r. revenue discounted for the ultimate loss or risk of loss due to profiteering, etc., appears in both p.a. and t.a. equilibrium. It is the same curve, except that perhaps some decisions as to p.a. are based upon less long-run estimates of demand than decisions as to t.a. L.r. profits are always maximised, both in investment decisions (t.a.) and in decisions as to the use of variable factors (p.a.). The s.r. data exist and are indeed those usually discovered in empirical research (hence the full-cost principle). But s.r. profits do not enter the picture under t.a.; under p.a. they do, and are not maximised.

(*e*) I have said above (sec. 3*c*) that we must use the full cost principle to understand business data and decisions, but the marginal analysis to talk welfare economics; and that the former's concepts are easily clothed in flesh and blood, while the latter's are nearly non-operative. I would not have this misunderstood.

It would be merely metaphysical nonsense to say that " empirical research establishes the full cost principle while *a priori* reasoning establishes the marginal analysis," or that one is true " practically " while the other is true " theoretically." Theory is almost as closely concerned with facts as practice; and *a priori* reasoning cannot establish any truth of any kind without an empirical basis. The facts (chiefly the l.r. maximisation of profit) used by the orthodox marginal analysis are as true, and true in the same sense, as the facts of the full cost principle. To the deductive superstructure built upon the basic facts of the former could correspond an *a priori* system derived from the latter. It is merely an historical accident that the analytical method with all its faults and virtues has attached itself to the one set of facts, while the other set, wholly compatible with it, has had to be painfully " discovered " by empirical research (as if it were not obvious the whole time). Correctly stated, the two sets of facts and all deductions from them dovetail in perfect harmony and complementarily.

The main lesson surely is that the orthodox marginal analysis must not be used for describing the processes of business thought, talking to entrepreneurs, accountants or trade unionists, or analysing statistical data. It is an esoteric language, suited to important but as yet esoteric discussions. There should, indeed, be two sorts of text-book, one about business and one about welfare, both incorporating theories of the firm couched in language suitable to them. The " business " text-book should begin with a discussion of the firm based on full cost. It should describe the extent to which costs really are in practice minimised,[1] and break up the catch-all category profit maximisation[2] into smaller and more useful concepts such as desire for a quiet life, entrepreneurial liquidity preference, s.r. maximisation, l.r. maximisation, idleness, conservatism, etc. It should then proceed to a descriptive macro-economics. The " welfare " text-book should include the present orthodox theory of the firm, and show how it is related to the facts and to the " business " text-book: it should not begin with macro-economics as at present, nor pretend to base itself on a generally agreed " Principles of Economics." For the " principles " are *not* generally agreed. The marginalist " principles " which we all learn are merely the micro-economic section of welfare economics. For " business " purposes the whole of " principles " needs to be recast in language and concepts suited to those purposes. But factual contradiction there is none. The same range of facts underlies both studies; some are emphasised in the one, some in the other.

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[1] For, of course, in practice they are not, and all sorts of wasteful practices are common among firms.

[2] Cf. sec. 3*a*, note 1.

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THE STERLING BALANCES OF THE STERLING AREA, 1939–49

I

The sterling area has been variously defined. Here it is taken to be the present scheduled territories *plus* Egypt, Sudan, Palestine and Transjordan.

What may loosely be called "sterling balances" have also been variously defined. Cmd. 6707, which starts the story, was concerned with the "external liabilities of the United Kingdom," subdivided into "net quick liabilities" and "overseas loans." It defined the first as: "Comprising banking liabilities less assets, and funds held in the United Kingdom as cover for overseas currencies, etc."; it gave no definition of the second, but details can be extracted from the Finance Accounts. Its successor, Cmd. 7099, broadly followed the same definitions. The *main* difference is in the treatment of the gold and dollar reserves, a difference not relevant to the sterling area. For the over-lapping date of December 31, 1944, it amounts to £163 million. But *another* difference is the difference in the quick liabilities for the same date of £65 million, made up of £16 million changed from loans, an exclusion of some private holdings previously regarded as banking holdings and a revision of figures. The bearing on the sterling area cannot be precisely settled.

Each paper gives, in apparently the same form, a subdivision by: (i) Dominions, (ii) India, Burma and the Middle East, (iii) other sterling-area countries, (iv) North and South America, (v) Europe and dependencies and (vi) rest of the world. Cmd. 6707 defines its Dominions as Australia, New Zealand, South Africa and Eire; Cmd. 7099 merely refers to an exclusion of Canada, but there is reason for thinking it includes Ceylon.[1] No other definitions are given. No explanation is given for the various differences by areas which can be seen for the one overlapping date, December 31, 1944.

But the next paper, Cmd. 7793, concerned itself not with

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[1] In Cmd. 7099 the "Dominions" figure for December 31, 1944, is £48 million more than in Cmd. 6707, and the "other sterling countries," £78 million less. Cmd. 7099 was published in April 1947. The Government of Ceylon Act is December 1947, but the Treasury may have classified Ceylon as a Dominion after the Ceylon (Constitution) Order in Council of May 1946. See also below, Section IV.

" external liabilities " but only with " sterling liabilities," dropped all references to loans as such, and gave particulars only for the sterling and non-sterling areas. It made various changes in definition, including a new joker in the pack, viz., " certain liabilities of H.M. Government " without further delimitation. The main definition is : " Sterling liabilities comprise net liabilities of bankers in the United Kingdom to their overseas offices and other account holders, including funds held as cover for overseas currencies, and certain liabilities of H.M. Government expressed in sterling or sterling area currencies." Cmd. 7793 excluded Egypt, Sudan, Israel and Jordan from its sterling area.

Parliamentary answers sometimes add to knowledge, but usually they do not and often they merely make the darkness visible. We are obviously not intended to know too much. For convenience of reference, however, I assemble the main official material. Thus : [1]

TABLE I

Official Material

£ million

Date.	Sterling area.				Non-sterling area.				Grand total.
	Dominions.	India, Burma, Middle East.	Other sterling.	Total sterling.	North and South America.	Europe and Dependencies.	Rest of World.	Total non-sterling.	
Cmd. 6707									
31.12.39	—	—	—	—	—	—	—	—	556
31.12.40	—	—	—	—	—	—	—	—	735
31.12.41	139	399	318	856	240	180	23	443	1299
31.12.42	189	695	388	1272	256	242	48	546	1818
31.12.43	236	1141	473	1850	278	281	56	615	2465
31.12.44	342	1537	555	2434	280	299	60	639	3073
Cmd. 7099									
31.12.44	390	1524	477	2391	346	378	56	780	3171
31.12.45	481	1929	561	2971	519	273	62	854	3825
31.12.46	444	1883	593	2920	847	356	91	1294	4214
Cmd. 7793									
31.12.45	—	—	—	2453	—	—	—	1210	3663
31.12.46	—	—	—	2417	—	—	—	1283	3700
30.6.47	—	—	—	—	—	—	—	—	3680
31.12.47	—	—	—	2288	—	—	—	1284	3572
30.6.48	—	—	—	2408	—	—	—	1144	3552
31.12.48	—	—	—	2322	—	—	—	1037	3359
30.6.49	—	—	—	2224	—	—	—	1009	3233

Nevertheless, if the receiving end does not give information, we can try the transmitting ends. From the publications of the central banks, currency boards and other authorities in the sterling area, we can build up series which are at least generally parallel with the official series when these give details. We must, however, follow the new definitions where they lead, and we cannot expect the British definitions always to be matched elsewhere. But most of the story can be found.[1]

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[1] I have added June 30, 1947, from *Hansard*, 11.11.47 (col. *42*). It does not give the usual division into sterling and non-sterling areas.

II

On the whole the Dominions do not present much difficulty. Their sterling assets or balances must, it seems, have developed largely along the following lines :

TABLE II

Dominions

£ million

	Dec. 1939.	Dec. 1940.	Dec. 1941.	Dec. 1942.	Dec. 1943.	Dec. 1944.	June 1945.	Dec. 1945
Australia	36	69	48	62	76	146	148	132
New Zealand	13	19	20	32	33	42	62	75
South Africa	9	2	2	0	14	24	26	59
Eire	75	79	97	117	138	159	170	184
Total	133	169	167	211	261	371	406	450
Cmd. 6707	—	—	139	189	236	342	384	—
	June 1946.	Dec. 1946.	June 1947.	Dec. 1947.	June 1948.	Dec. 1948.	June 1949.	Dec. 1949
Australia	155	165	154	132	198	269	290	326
New Zealand	77	82	83	60	76	55	70	52
South Africa	31	6	4	49	70	32	1	(44) *
Eire	187	197	191	180	168	175	179	185
Total	450	450	432	421	512	531	540	607
S.A. Gold Loan	—	—	—	—	80	80	30	—

* November.

My Australian figures represent, to June 1945, the gross "sterling reserve and money at short call in London" of the Commonwealth Bank and, from December 1945, the gross "gold and balances held abroad" of the same Bank *less*, as a partial correction, the gross Australian dollar holdings in America as reported to the Federal Reserve Board. Until 1941, when the Bank took over the sterling funds of the trading banks, my figures may be too low as against British definitions; thereafter, they may be too high. In addition to gold and working balances, they include Treasury bills, Treasury deposit receipts and short-call loans, yielding ½–¾%, and recently some £30 million short-dated British Government securities, yielding 1½–2%.

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[1] I am indebted to the Institute of Bankers for placing at my disposal their central bank reports and to Miss Shrigley and Mr. Spiro, their librarians, for much courteous assistance; to certain overseas banks for more recent information; and to the Crown Agents for help in collecting currency reports. Factual material in the text is drawn from these reports, or Year-books, unless otherwise stated. All figures are in pounds sterling, except where indicated, with conversions at official rates of exchange.

Australia's balances increased by some £100 million over the war years, ended in a four-fold increase and have more than doubled since then. In the 1930s they were some £40–£65 million. For the three years ended June 1940 Australia had adverse balances which she met from her funds and, early in the war when she was unable to meet all her overseas expenditure from her current resources, she arranged to borrow from Britain what was needed.[1] Lend-lease eased the strain, and the British advances were repaid in 1944. The high level of reserves in 1946 were partly due to the recovery of war costs from other governments, to " substantial " payments for the Royal Navy based on Australian ports and to low and slow delivery of imports. In 1947, though the non-recurrent items were tapering off, Australia made a gift of £20 million to Britain as " a contribution to the war costs incurred by Britain in and around the Pacific." [2] But in the same year the Bank thought it appropriate to sound a warning note about the meaning of sterling balances : although the reserves looked high, " we have to face up to the question what our reserves really are "—a pertinent question indeed just before the collapse of sterling convertibility. By 1948 its note was graver. The new high level was partly due to an inflow of capital, British and American. Some was true investment money, but the rest was " hot " money and needed watching.[3] Moreover, Australia was not a net dollar earner. Hence, in the Bank's opinion, Australia

> " will face a difficult situation if the sterling area system should prove incapable, taken as a whole, of achieving a dollar balance by the time E.R.P. has terminated. The next few years will undoubtedly see changes in the sterling area. With foresight, they will be the changes of a developing organism."

But it did not pose or answer the question : what happens without sufficient foresight? By 1949 it was reporting that, despite capital controls, hot money had become substantial : " perhaps £A100 million of temporary funds may disappear quickly." This inflow, mostly British, inflated the reserves. Moreover, though better export prices had helped to raise the total legitimately, an unstable element in the record total was doubt about parities. With £A125 doubtfully equal to £100 and possibly to be brought to parity, Australian debtors and buyers deferred payments while their overseas counterparts rushed in funds to pay in advance. The sterling balances soared, and still soar.[1]

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[1] It turned out to be £12 million, probably at 3%. I believe this advance plus the New Zealand advances (see below) account for much of the difference between my Table II and Cmd. 6707, the latter totals being net.

[2] A second gift, £8 million, was made in 1949.

[3] The Australian view. The British was different : the capital movement was known and caused no anxiety (*Hansard*, 22.4.48, col. *160*).

As the above indicates, Australia was unable during the war effectively to accumulate sufficient funds with which to redeem sterling debt on any scale, although she converted some with British help. The debt has fallen somewhat since the war. Thus, in £ million at June 30 each year : [2]

1939.	1940.	1941.	1942.	1943.	1944.	1945.	1946.	1947.	1948.	1949.
467	467	478	475	473	455	443	408	403	398	388

New Zealand's story is simpler. My figures are the Reserve Bank's sterling exchange less overseas liabilities plus trading banks' net assets overseas in respect of New Zealand business *less*, in this case, the net dollar assets reported to the Federal Reserve Board. Subject to the treatment of British advances, this seems close to British definitions.

Before the war New Zealand was in exchange difficulties and held little sterling. Early in the war she, like Australia, arranged to borrow from Britain whatever was needed in exchange, the advances to be repaid by 1965 or earlier "if sterling funds permitted." Partly paid off before, the full repayment was made in 1946.[3] Mostly as a consequence, her sterling balances rose slowly until 1945, but thereafter they fluctuate about a level some four or five times the pre-war figures. In 1947 she made Britain a gift of £10 million in warm recognition of Britain's war and post-war efforts. In August 1948 when her position was improving (and with a capital inflow), she suddenly appreciated her pound from £NZ124 = £100 to parity and gave speculation no change to impinge on her sterling balances.

There were a few war-time conversions of her long-term sterling debt, with British help, and some post-war redemptions. Thus, in £ million, at March 31 each year : [1]

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[1] See *Economist*, 4.2.50, p. 282, for current rumours of revaluation and inflow of sterling.

[2] Figures kindly supplied by the Commonwealth Bank. They differ in some particulars from those in the *Official Yearbook*.

[3] British sources are not helpful, but see (*e.g.*) *Hansard*, 14.11.44 (col. 1805) when £18 million was outstanding. For New Zealand budget statements, see Keesing's *Contemporary Archives*, pp. 4835, 5296, 6114 and 7733. The advances were made out of the war-time Votes of Credits. Some interest payments can be traced in the Finance Accounts, and there are references in the Reports of the Committee on Public Accounts. Borrowing and repayment criss-cross, and I cannot estimate the amounts outstanding at December and June.

1940.	1941.	1942.	1943.	1944.	1945.	1946.	1947.	1948.	1949.
158	158	154	158	159	159	121	95	83	80

South Africa's story, on the other hand, reflects her more complicated history. For, at once a gold-producing country and a country deeply divided on the question of the British connection,[2] she has always tended to be more on a gold standard than on a sterling one. Whatever the reasons, she held and holds little sterling permanently. All this is reflected in the figures : they are the Reserve Bank's gross bills, call money and cash balances with " foreign " central banks *less*, by way of partial correction, the gross South African dollar assets reported to the Federal Reserve Board.

In general, South Africa took out her improving position not by accumulating British promises to pay but by stacking up solid gold in her own vaults, by repatriating public and municipal debt and industrial shares and by maintaining imports wherever possible. Her sterling balances first reached double figures in 1943 when most of the debt had been redeemed, when imports and shipping were specially short and when there were special British purchases of gold for sale to India and the Middle East as a method of combating the war-time inflations raging there.[3]

The gold holdings, in million of fine ounces, developed as follows for December each year (November in 1949) :

1939.	1940.	1941.	1942.	1943.	1944.	1945.	1946.	1947.	1948.	1949.
7·0	10·2	10·5	18·1	20·2	23·1	26·1	26·8	21·8	5·2	3·4

As with India, the public debt was redeemed as a matter of policy, and much the same was true of municipal loans. There was much exhortation to bring home industrial shares of all sorts, and, as an incentive, an extra discriminatory income tax was imposed in 1943 on dividends paid to non-residents. The external public debt fell as follows, in £ million at March 31:

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[1] From the *Yearbook* to 1946, later figures kindly supplied by the Reserve Bank.

[2] South Africa declared war by eighty votes to sixty-seven, and there were two later attempts, with much the same voting, to take her out of it.

[3] Bought at official monetary prices, but sold as merchandise at market prices, the shipments could be regarded as profit-making deals or as part of war costs. At first South Africa claimed a share in the " profits," but later accepted the view that the deals were war costs. See *Economist*, 8.4.44 and 22.4.44, pp. 478 and 542.

1940.	1941.	1942.	1943.	1944.	1945.	1946.	1947.	1948.	1949.
106	98	60	21	19	18	14	14	14	13

Other repatriation is not so easily documented, but the Bank for International Settlements suggests it was £50 million by 1943 *before* the added incentive mentioned above.[1]

Imports were kept relatively high when possible. The cotton purchases in South America in 1943–44 are an example. Generally, by reason of her special position in the Dominions and of her gold production, South Africa was not particularly subject to any restrictions directly associated with the sterling dollar pool.

After sterling's collapse in 1947, South Africa in part took herself out of the sterling area. She made, government to government, a gold loan of £80 million to Britain. An inflow of capital, seeking safety, had begun late in 1946, and was in full spate in 1947—a net inflow of some £120 million, mainly British and in the second half of 1947.[2] This is the main cause of the abnormally high sterling balances ruling late in 1947 and early in 1948. A spending spree and speculation developed in due course. By mid-1948 the crisis broke. Gold and foreign exchange valued at some £250 million at the end of 1947 fell to some £160 million (including the gold loan) a year later and then to some £50 million late in 1949. The gold loan was fully repaid by September. The general situation is only slowly righting itself.

In a fairly deep sense, however, there never has been a sterling-balance problem in South Africa. The holdings have never really been big enough.

Eire—a neutral Dominion during the war and now a Republic—almost naturally presents difficulties, even statistical, in any British context. There are fairly full banking figures, that is, " an average of figures for a selected date in each of the three months of the quarter " and of British Government securities in the legal tender fund " for the monthly average of Saturdays."

The banking figures are awkward to interpret, especially in the perennial puzzle : how short must a short-term asset be to constitute a sterling balance as distinct from a long-term sterling investment? Banks in Eire have the closest connections—indeed, almost inseparable connections—with Britain and Northern Ireland. They hold massive investments in British Government securities:[1] they keep their cash reserves in London and have funds in Northern Ireland. What, out of all this intermingling of funds in place and kind, long and short, citizen and denizen, are the appropriate items to be called "sterling balances"? What do the official British figures include? The Irish dating, too, is not precise.

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[1] See 13th Report (1943), p. 151. There are frequent references in the *Economist* to Kaffir buying and to repatriation in general, *e.g.*, 3.1.42 (p. 14) and 8.1.44 (p. 50).

[2] According to the Chancellor it was " considerable," but as he defined " considerable " as " worthy of consideration," I give the Reserve Bank's estimate. See *Hansard*, 10.2.48 (col. 215).

I assemble the material, with details of the main headings but with full totals, preparatory to evading a personal solution of the Irish problem. Moreover, it would almost seem that Cmd. 6707, hurriedly put together for Washington, did much the same and merely took the net Irish assets as below and called them British liabilities, even "quick liabilities." For the banks I give the June or December quarterly averages, and for the notes the Saturday averages of June or December, in £ million. Thus:

TABLE III

Eire, External Assets and Liabilities

	Dec. 1939.	Dec. 1940.	Dec. 1941.	Dec. 1942.	Dec. 1943.	Dec. 1944.	June 1945.	Dec. 1945.
Cash, call money	21	27	35	43	49	57	61	63
Loans, bills, advances	32	30	28	26	26	24	25	25
Government securities	64	68	91	107	126	141	151	160
All external assets	122	130	158	180	206	227	241	253
Notes in N. Ireland, etc.	4	7	10	12	13	13	12	13
Deposits in N. Ireland, etc.	43	46	56	61	68	74	78	81
All external liabilities	56	62	75	83	92	96	100	104
Banks' net external assets	66	68	83	97	114	131	141	149
Legal tender cover	9	11	14	20	24	28	29	85
Net total external assets	75	79	97	117	138	159	170	184
	June 1946.	Dec. 1946.	June 1947.	Dec. 1947.	June 1948.	Dec. 1948.	June 1949.	Dec. 1949.
Cash, call money	58	64	59	59	51	60	56	61
Loans, bills, advances	28	29	31	34	36	36	37	38
Government securities	170	179	177	165	158	159	163	161
All external assets	260	276	272	262	251	260	261	266
Notes in N. Ireland, etc.	13	12	12	11	9	9	9	9
Deposits in N. Ireland, etc.	84	92	95	100	101	106	105	107
All external liabilities	107	116	118	122	122	127	126	128
Banks' net external assets	153	160	154	140	129	133	135	138
Legal tender cover	34	37	37	40	39	42	44	47
Net total external assets	187	197	191	180	168	175	179	185

This is a real Donnybrook Fair of figures, inviting all comers. There are camp followers too: the British notes and coins circulating, quite cheerfully and acceptably, in Eire; Irish holdings in the British Post Office; assurance funds; perhaps the ancient eighteenth-century debt to the Bank of Ireland; and so on. Again, is it right to suggest, *sotto voce*, an analogy as above with the colonial currency boards in the treatment of Irish notes? The securities are held in Dublin, not London.

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[1] They seem to have no other appropriate outlet in their own judgment. Recently, the Irish Government has expressed quite a different opinion, and it may in the future control or direct the bank investments along nationalistic lines and cause them to sell British securities and bring the value home. See *Economist*, 17.12.49, p. 1360, and *Hansard*, 13.12.49, col. 2521. Note too the critical tone of the Irish memorandum to O.E.E.C. (*Interim Report on European Recovery Programme*, 1948, Vol. II, p. 504).

However all this may be, these assets can be liquidated at the order of another government and, so long as Irish funds are not blocked and non-dollar goods are available, their value could be transferred home. They are sterling liabilities, even if not "sterling balances."

There was no redemption of external debts, for of these, as of snakes, Ireland has none. Equally, the Federal Reserve Board reports no separate Irish dollar holdings; even if Eire had any, they would be small.

III

The next great area is officially given as "India, Burma and the Middle East," without further definition. Fortunately, the story of India's massive accumulations is well documented by the Reserve Bank.[1] The war-time developments in Egypt and in Palestine can be determined at least as to magnitudes, and the post-war Egyptian movements can be traced in detail. Burma from late 1941 and Iraq and the Trucial Sheikhdoms remain obscure all the way: they are blanks which must be filled in by differences and conjectures if at all.[2] Then, as a general conspectus with some rounding off and subject to explanations below, as follows in £ million:

TABLE IV

India, Burma and Middle East

	Dec. 1939.	Dec. 1940.	Dec. 1941.	Dec. 1942.	Dec. 1943.	Dec. 1944.	June 1945.	Dec. 1945.	Dec. 1946.
India:									
Cash and securities	85	142	217	360	637	930	1062	1242	1205
Annuities, etc.	—	—	—	30	27	25	24	22	20
Egypt	45	80	125	180	280	350	380	404	395
Palestine	20	25	30	55	80	95	105	115	120
Above total, rounded	150	245	370	625	1025	1400	1570	1785	1740
Burma, Iraq, etc., and discrepancies	10	10	30	70	115	135	160	145	145
Cmd. 6707, rounded	—	—	400	695	1140	1535	1730	—	—
Cmd. 7099, rounded	—	—	—	—	—	1525	—	1930	1885

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[1] For the present purposes I use the term "India" generally to cover the Republic of India and the Dominion of Pakistan. In the monetary sphere the full division was made on July 1, 1948. There is some criss-crossing in the accounts, and my figures for 1949 may contain a little duplication.

[2] In the geographical Middle East, Iran and Arabia are non-sterling; I treat Syria and Lebanon as European dependencies in the franc area and Cyprus and Aden as "other" sterling countries. The Sheikhdoms (Kuwait, Bahrein, Oman) are probably in the official Middle East, as here.

The bulk of this debt was British-held, though we cannot legitimately say more.[1] The sterling debt of the Central Government, which was some £350 million in 1939, was negligible ten years later.

But the main flood went into an inflation of the rupee note issue as a counterpart to the sterling balances.[2] Thus, for India and Pakistan, in £ million on June 30 each year :

	1940.	1941.	1942.	1943.	1944.	1945.	1946.	1947.	1948.	1949.
Notes issued . .	194	219	346	560	708	864	941	949	1013	1021
Sterling securities .	99	89	200	426	621	776	852	852	852	580
Rupee securities .	37	69	92	89	43	43	43	43	96	368
Total securities .	136	158	292	515	664	819	895	895	948	948

The still further growth of the balances was checked in 1943–44 by the sale of South African gold (see above). India's share was "fifty odd crore," say £40 million. Again, in 1944 India was credited with some of her own dollar surplus. But recently some £176½ million has been funded as the capital sum under the Pension Annuities Scheme, with annual discharges tapering off from some £8 million a year now to a final liability of just £163 for an annuitant in A.D. 2007–2008.[3] With the railway annuities of 1942, some £30 million then, these long-term items do not, so to speak, overhang the market, and they should be shown separately at all times. Unlike the long-term Irish holdings they are not subject to liquidation at the order of another government.

Finally, it may be mentioned that India's traditionally favourable dollar balance weakened in 1947–48.[4] And in the world food shortage, when she feared a repetition of the Bengal famine (there had been a death roll of 1,500,000 in 1942–43), India drew on her balances. Pending the first settlement in 1947 she imposed control on capital outflows to Britain and the sterling area, and subsequently she intensified them for the second settlement in 1948 to check repatriation of British capital from India.[1]

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[1] The redemptions were mostly done by vesting in Britain *and* in India. For a good description, see *Economist*, 30.10.43, p. 562.

[2] *E.g.*, *Economist*, 2.10.43, p. 468 : "Inflationary finance of the crudest character—that is, the issue of additional currency—has been the counterpart of India's real contribution to the war in terms of goods delivered and services rendered," the growth of sterling I.O.U.s providing an almost perfect parallel to the rise in the rupee issues, "the country is in fact bearing the whole of the real burden represented by combined Indian and British Government defence expenditure." But taxation and/or loans were in fact out of the question in the then state of Indian opinion and administration.

[3] For details, see Cmds. 7472 and 7479 of 1948.

[4] India's net earnings of hard currencies during 1939–46 were £85 million and were surrendered to the Empire pool. It may be noted that India and the United States broke about even over lend-lease.

Indian sources display increasing restiveness about the balances. They were effectively blocked during the war when imports and shipping were not available and they could not be recouped in goods and services. They were formally blocked in 1947 into a No. 1 Account, which carries current earnings, and a No. 2 Account which is frozen. Transfers, somewhat misleadingly called "releases," have taken place from No. 2 to No. 1. They then become spendable, but whether they are actually spent depends on the availability of goods of the right kind and price to spend them on. Other transfers are offsets, such as the Pension Schemes and military stores. Here, as elsewhere, movements in balances cannot be legitimately interpreted without a full balance-of-payments statement which in fact is not yet forthcoming from either side, though begun in India.

The assets of the Reserve Bank included the cover for the Burmese notes. In June 1942, following the Japanese invasion, the Government of India took over both liabilities and assets and the Bank's sterling balances fell, possibly by £20 million. Now held for Burma, they would increase with the issue of military notes on re-occupation and, in turn, would revert to the Burmese Currency Board on Burma's independence in 1947. But particulars seem missing. The active note circulation in 1948 was some £30 million; bank deposits, some £15 million; and "balances held abroad" of the Central (Union) Bank, some £9 million.[2] Perhaps, as a guess, some £30 million of the residual item in Table IV above is Burmese. But though nothing is blocked, Burma is short of sterling, as Colombo has demonstrated.[3]

The Indian situation was in many ways reproduced in Egypt. The rise in holdings was largely due to British and American military expenditure, which, as elsewhere, was not offset by countervailing imports and services during the war. In mid-1947 the balances were formally blocked and Egypt and Sudan excluded from the sterling area. Figures were disclosed by Dr. Dalton in his abortive campaign for "scaling down" in 1947, viz., £404 million at the end of 1945 and £395 million at the end of 1946. Now the foreign holdings of the National Bank of Egypt, which are almost wholly sterling, are known all the way, and at each of these dates they were four-fifths of the official totals. On this basis I derive my figures backwards for Table IV. Since the acrimonious "settlement" of mid-1947 and the setting up of the usual No. 1 and No. 2 Accounts, the National Bank publishes the state of the two accounts as quoted in the table. Some £350 million two years ago, the Egyptian holdings are now £320 million, which represents no great repayment of debt.[1]

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[1] The statement that sterling can move freely within the sterling area is increasingly out of date as this shows. Cf. Australia, Ceylon, South Africa. With non-convertibility the area is showing signs of strain and heterogeneity. India had entertained great hopes of convertibility under Bretton Woods and the American Loan Agreement, hopes which were dashed. But there is still co-operation on points. For example, India refers all would-be transfers from India to Egypt to the Bank of England for decision.

[2] From the 1948 Bank Report. Not more than some £7½ million of the note cover can be Burmese, so possibly £20 million is sterling. The Bank's own £9 million is likely to be sterling.

[3] On general Anglo-Burmese financial arrangements, see *Hansard*, 22.5.47, col. 276 and, more recently, 22.3.50, col. 1955. At times we have financed the rice crop and supplied dollars.

It may be noted that Egypt arranged to redeem her long-term external debt with the rise in the balances by 1942, the British share being some £15 million. Her dollar holdings seem to have doubled since she left the sterling area.[2]

The sterling balances or assets of Palestine and Transjordan are known or deducible for 1945–47, namely, about £115, £120 and £100 million respectively.[3] For each of the quiet years 1945–46, they were about double the London cash and securities of the Palestine Currency Board "backing" the notes, which figures are available all the way. On this basis I derive my figures backwards for Table IV. Recent Israeli statistics are very difficult to understand, and no doubt there will be many counter items and liabilities to be argued out before a net figure is agreed, as already indicated in Cmd. 7715.

Thus, of the £100 million sterling assets of Palestine post-war, some £50 million was in the currency account. Such cover is normally a long-term item, especially where the hard core of currency is concerned; most of it is not really relevant to "sterling balances" in any liquid sense. After all, an eighteenth-century debt still "backs" some of our own notes. But where a country is, or becomes, self-governing, much or all of its notes can be backed by local securities quite as well as by foreign ones. The thing to do then is to "cash" the foreign securities and replace them by local ones. This process has begun in Palestine, where Israeli securities are replacing British ones; the issues of the Currency Board are falling, and with them, its British securities.[1] Other current examples are Iraq and, faintly, Southern Rhodesia. India and Egypt could be examples on the grand scale, followed by Eire. Under non-convertibility the Sterling Exchange Standard is not sacrosanct.

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[1] On the whole subject and for Egyptian views, often sharp, see the National Bank's *Economic Bulletins*, especially July 1948. For other estimates of war-time balances, see Bank for International Settlements, 14th Report (1944), p. 141. A local expert has privately given me his estimates of "spot assets" for banks 1944–46 as some £350, £389 and £376 million respectively. His definitions, however, are narrower than the official ones in Cmd. 7163 on Egypt. Another £10 million or so might well be in private accounts and so on.

[2] As given by the Federal Reserve Board. For some remarks, of doubtful taste, see *Economist*, 18.2.50, p. 394, and an answer in 11.3.50, p. 529.

[3] I obtain the £115 million by differencing between the sterling area of Cmd. 7099 and of Cmd. 7793. The £120 million is from Cmd. 7167 (*The Colonial Empire*), p. 106—differencing would give £108 million. I infer the £100 million from *Hansard*, 27.5.48, col. 366. For other estimates, see *Economist*, 30.12.44, p. 870.

There remains Iraq, the last main identifiable area of "the Middle East." She presents many difficulties. For example, the Irak Petroleum Company and its subsidiaries form almost a "foreign-exchange entity" in themselves and, as oil, not much disclosed in Iraqi or British sources. To what extent are they deemed within the definition "other overseas account holders?" The Iraqi sterling assets were blocked in 1947 under a very complicated agreement. These assets were limited to ownership by the banks, the Currency Board and the Government. But private accounts "held by residents of Iraq" were not blocked, at least so long as they were not requisitioned by the Iraqi Government.[2]

The banks cannot have held much. Total deposits in Iraq were under £10 million before the war, doubled during it and are now some £16 million. The Currency Board sterling assets are known; thus, for March 31 each year (June 30 in 1949) in £ million:

	1940.	1941.	1942.	1943.	1944.	1945.	1946.	1947.	1948.	1949.
Cash and securities .	6¼	7	13	27	40	44	45	44	39	34

Even at the peak, the Board and the banks can hardly have held more than £50 million. Yet the independent items in Table IV all seem justified in general magnitude, and still they leave a final residual for 1943–46, omitting £30 million for Burma, of £100 million or more. Some of this will be the private accounts, unknown in ownership and amount, including the petroleum companies. But part of the final residual may fall to the Iraqi Government itself. If the true holdings of Iraq had been only some £50 million, and mostly for currency backing, Iraq would surely not have been so emphatically included in the scaling-down campaign of mid-1947.

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[1] See the Board's Reports. For example, in year ended March 31, 1949, some £9 million of notes was issued in London for cash there, and some £37 million redeemed in cash there. The corresponding totals for the previous nine years were £67 million and £20 million. The Board's British securities were £40 million in March 1948, but only £21 million in March 1949. Palestine's sterling balances might then have been some £30 odd million.

[2] See Cmd. 7201 of 1947, modified by Cmds. 7269 and 7490. For an account of the intricacies of the oil companies, see I.M.F.'s *Balance of Payments Yearbook*, 1949, pp. 225–30. It may be noted that Miss D. Warriner, a high authority on the Middle East, says: "Egypt and the Sudan have between them a sterling balance of £470 million, Iraq of £100 million and Palestine of £150 million" (*Land and Poverty in the Middle East* (1948), p. 136). But she gives no definitions or sources.

If, as is likely, the Trucial Sheikhdoms are officially included in "the Middle East," they might have more sterling than their odd name suggests, and so would account for some of the residual. They have oil.

IV

The final subdivision of the sterling area is: "Other sterling-area countries." It should include Iceland, Southern Rhodesia, the Colonies and protectorates outside the Middle East and, possibly, the Channel Islands. The latter, blocked in the war, may like Eire be bigger holders than their size suggests. I collect a few official figures to illustrate the official jumbling, and I separate Iceland on the basis of I.M.F. data in their *International Financial Statistics*.[1] Thus, in £ million:

	Dec. 1941.	Dec. 1942.	Dec. 1943.	Dec. 1944.	Dec. 1945.	Dec. 1946.	Dec. 1947.	Dec. 1948.
Cmd. 6707 . . .	318	388	473	555	—	—	—	—
Cmd. 7099 . . .	—	—	—	477	561	593	—	—
Iceland	7	12	16	20	17	8	2	3
British "other sterling" .	311	376	457	535	544	585	—	—
Crown Colonies ex. Palestine and Ceylon . . .	—	—	—	—	530	597	600	610

Cmd. 6707 is deemed here to include Ceylon in this group as a colony, and Cmd. 7099 to exclude her as a Dominion. The difference above would suggest £78 million for her in 1944. But the difference between the Dominion figures in Table I above, also official, gives £48 million then, a figure given independently by Ceylon herself. There seems to have been a downward Treasury revision of some £30 million for this area between the two papers, but no explanation is given.[2] Despite their similar definitions,

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[1] The Fund's Icelandic figure for 1945 so far published contains an error. I believe my own figure to be substantially correct, but there are difficulties in interpretation.

[2] It is tempting to associate the *fall* of £78 million here with the *rise* of £78

Cmds. 6707 and 7099 are not completely consistent documents.

Ceylon has recently published her own story *in extenso*.[1] It discloses a history of favourable trade balances, adverse terms of trade and inflation via the sterling–rupee link. I summarise the relevant detail below. The rapid drop in her balances in the world food shortage of 1947–48 is no doubt sufficient reason for the financial agreement and blocking of balances in April 1948.[2] She extended exchange control to the sterling area in June 1948 and, with American advice, is setting up her own Central Bank with an independent dollar reserve from her own net dollar earnings.

A late parliamentary answer [3] in 1949 disclosed the colonial balances, exclusive of Ceylon and Palestine, as £530 million at the end of 1945. Less my estimate for Iceland, Cmd. 7099 gives some £545 million for the residual British territories. We may plausibly assign the difference of some £15 million to Southern Rhodesia, which, though not a Crown Colony, is "other British." If so, her sterling balances would be some 2½ times the United Kingdom assets [4] disclosed by the Southern Rhodesia Currency Board, which, however, also covers Northern Rhodesia and Nyasaland. These figures are available all the way. If such a multiplier is thought low, it must be remembered that Rhodesia has close links with South Africa, and some of her funds may be there. On this limited basis of one year [5] I hazard guesses for

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million for Europe, and to say it is due to the shift of European dependencies following the legal changes in the sterling area in 1944. But this ignores the date of Cmd. 6707 and the different treatment of reserves between it and Cmd. 7099.

[1] In November 1949: *Report of the Controller of Exchange*, 1948, pp. 1–33. I am indebted to the Reserve Bank office for a copy. It is full of current and historical detail, including the case of "sterling companies" domiciled in London (cf. Iraq above). It is written with the independence of a Dominion. *E.g.*, the sterling balances "are the product of sacrifice on the part of the people of Ceylon" (p. 7); "the aim of the Control in its extended form was to conserve the exchange resources of Ceylon—a purpose distinct from the objective of the original control, which was to conserve the exchange resources of the sterling area as a whole" (p. 14) under "instructions received from the Secretary of State for the Colonies" (p. 11). The setting up of an independent reserve has alarmed the *Economist* (13.8.49, p. 368), and it does indicate the creaking of the whole area. But Dominions are Dominions, with the same alloy of self interest as London itself.

[2] See Cmds. 7422 and 7766. The wording on p. 3 is odd.

[3] *Hansard*, 25.5.49, col. 1255.

[4] On its inauguration in 1940 the Board took over some South African and Rhodesian assets, all rather small. But by an Act in 1947 the Board must, if called upon, invest up to 20% of its assets in the local registered stock of its three Governments, and this process has begun.

[5] It will be seen that for 1946 the Colonial Office figure for the Crown Colonies (Cmd. 7167 *less* Ceylon) is higher than the Treasury figure (Cmd. 7099) for a wider area.

1941–48. Her loan of £3 million was repaid by 1948; details can be had in the Finance Accounts.

The sterling balances and assets of the Crown Colonies have been officially defined, with apparently only verbal variants,

> "Currency Board funds which provide the sterling reserves for local currencies, Colonial Government funds held with the Crown Agents for the Colonies, loans to His Majesty's Government in the United Kingdom expressed in sterling or sterling area currencies, and sterling funds held in London by banks operating in Colonial territories." [1]

The currency funds [2] are, to a minor extent, cash in London and, for the rest, medium-dated sterling securities of various kinds, all marketable in London and frequently reshuffled to maintain and often to increase their capital value. But as argued earlier, such cover is in the main permanent, and unless there is drastic deflation in the Colonies—for which history gives no support [3]—these securities are fixtures and do not overhang the market as balances. Much detail can be seen in the various Board Reports, and convenient totals are given in the Colonial Office List.

Funds held by or through the Crown Agents would be the Joint Colonial Fund, working balances, temporary investment of revenue surpluses, the invested funds of pension schemes, savings banks and other provident devices and so on, and possibly the funds or investments of Colonal Marketing Boards. The wide range of possibilities can be sampled in Colonial Finance Accounts, in the balance sheets given in current Colonial Reports and the summaries in the Colonial Office List.

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[1] See Cmd. 7715 (*The Colonial Territories*, 1949), p. 78. The main origin is thus officially described: "The growth of the currency circulation and of bank balances may be attributed partly to military expenditure in the Colonies and partly to a relative increase in exports of Colonial produce as compared with imports, due to war-time conditions of short supply and to the co-operation of Colonial Governments in following a strict policy of import licensing" (Cmd. 7167, p. 106). Cf. Ceylon above.

[2] For an authoritative account of the Currency Boards, see Sir Gerard Clauson's article in ECONOMIC JOURNAL, 1944, pp. 1–25. It may be noted that the East African Board is now solvent and that West Africa has now power to invest in local securities.

[3] Not even West Africa, the most likely case. The greatest net reflux so far was £5 million in 1920–21, and the next greatest £4¾ million in 1938–39. But there may well be a revulsion from the gigantic issue of £20 million in 1948–49, which easily dwarfs the next highest, £9 million in 1919–20. Cf. *Economist*, 31.12.49, p. 1492.

Loans to Britain were as follows in £ million at December 31[1]:

	1940.	1941.	1942.	1943.	1944.	1945.	1946.	1947.	1948.	1949.
West Africa	0·5	0·8	1·3	1·5	1·6	1·7	1·7	1·7	1·5	1·5
East Africa	0·2	2·5	5·7	10·0	12·5	15·3	18·1	15·0	13·0	10·9
Malaya .	—	2·3	2·3	2·3	2·3	2·3	0·0	0·0	0·0	0·0
Ceylon .	—	2·8	4·3	4·4	5·8	7·6	7·6	7·4	5·1	5·0
West Indies	0·8	2·1	2·9	4·7	5·0	5·2	2·7	2·6	2·5	1·8
Others .	0·2	0·6	1·6	3·7	7·0	8·1	8·4	4·5	4·0	3·2
Total .	1·7	11·1	18·1	26·6	34·2	40·2	38·5	31·2	26·1	22·4

It will be seen they are all being repaid.

My main impression of official colonial funds is one of permanence, of assets rather than balances. Lent mostly to us, they are a heavy counterweight to the Colonial Development Acts.

We have official figures, including banking funds, for groups of colonies for 1945 from Hansard, as above, and for 1946–48 in Cmds. 7167, 7433 and 7715. Something more can at least conjecturally be devised in the absence of direct information.

Parts of the West and East African stories can be found in their Currency Reports. For the four years 1945–48 the ratios between the December sterling balances of West Africa and the June currency assets are 3, 3, 2·7 and 2·8; and the ratios between the East African balances and the local currency circulation [2] are 5·5, 4·8, 5·1 and 5·2. Accordingly I have used multipliers of 3 and 5 respectively to calculate their sterling balances back to 1941. Malaya's balances of £115 million in 1945 can reasonably be antedated [3] as some £100 million to 1941 and so maintained to her liberation. Hong Kong eludes even Imperial authority, and to grapple further would require impossible mental ju-jutsu.

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[1] Based on information kindly supplied by the Colonial Office with own additions for Ceylon 1948–49. The Finance Accounts are patchy. To obtain the 1945 figure of £48,846,000 "raised in the Colonies and re-lent to H.M. Government" (Cmd. 7167, p. 105), I am advised to add "£1·1 million repaid to Trinidad and the loan from Malta amounting approximately to £7·7 million." But this £7·7 million was merely the unspent balance of our gift of £10 million to Malta in 1942. For a protest about the handling of the grant, see *Malta's Accounts and Finances, 1946–47*, para. 21. It may be noted that Malta is replacing British notes by local ones.

[2] The East African Currency Board supplied the military notes for Ethiopia and Occupied Italian territories; hence, its assets are mixed, and comparison must be made on its notes and coin in East African circulation only. When Ethiopia in 1946 abolished the fair Maria Theresa dollar, she also withdrew the East African notes, returned them for redemption and now owns them as balances.

[3] See, for example, *Economist*, 25.10.41, p. 510 and 3.1.42, p. 14, for a discussion of Malaya's balances.

Ceylon and Rhodesia have been covered. In this way, and using much official material for 1945–48, I conjecture that the following conspectus represents at least the true magnitudes; thus, in £ million with some rounding off:[1]

TABLE V

Colonies, Ceylon and Rhodesia

	Dec. 1941.	Dec. 1942.	Dec. 1943.	Dec. 1944.	Dec. 1945.	Dec. 1946.	Dec. 1947.	Dec 1948.
West Africa	45	60	80	90	100	115	125	145
East Africa	40	50	70	80	100	100	105	105
Malaya	100	100	100	100	115	125	115	100
Ceylon	20	25	33	48	79	83	50	48
Rhodesia	7	10	10	15	15	20	20	20
Hong Kong	95	130	160	170	210	220	75	80
Other							180	180
Total	310	375	455	505	620	665	670	680

We are left with £180 million, in accordance with Cmds. 7433 and 7715, for the unnamed "other" colonies in 1947–48. It is a very large sum to be found for the scattered islands in the Mediterranean, the West Indies, the Indian Ocean and the Pacific, usually pictured in deep poverty. Nor do the following comparisons throw any light on the subject:

	Latest population c. 1947, '000.	Public revenue 1947, £'000.	Sterling assets 1947, £ million.	Per head, £.	Ratio to revenue
Gambia, Gold Coast, Nigeria, Sierra Leone	31,351	31,454	125	4·0	4·0
Kenya, Uganda, Tanganyika, Zanzibar, Pemba	17,525	21,731	105	6·0	4·8
Malaya, Singapore, Borneo, Brunei, Sarawak	6,873	43,117	115	16·5	2·7
Ceylon (1946)	6,657	34,325	83	12·5	2·4
Southern Rhodesia	1,979	12,700	20	10·0	1·5
Hong Kong	1,800	10,269	75	41·5	7·3
Northern Rhodesia, Nyasaland	3,870	6,165	—	—	—
Cyprus, Gibraltar, Malta	789	11,744	—	—	—
Bahamas, Barbados, Bermuda, Guiana, Honduras, Jamaica, Leeward Is., Trinidad, Tobago, Windward Is.	3,079	28,774	—	—	—
Fiji, Mauritius	726	5,447	—	—	—
Total, "others" as listed	8,463	52,130	180	21·0	3·5

It is surprising to find the last four groups so very well-off in sterling balances, even when American bases in the West Indies are remembered. But further conjecture seems useless.

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[1] Totals for 1941–43 from Cmd. 6707 less Iceland; for 1944–46, from Cmd. 7099 less Iceland plus Ceylon; for 1947–48 from Cmds. 7433 and 7715 plus Ceylon and Rhodesia. It seems better to round off than to pretend to greater accuracy.

V

The sterling balances have many characteristics, controversial and otherwise. But it seems best first to see how they originated and how they are distributed, and that is the present purpose.

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REVIEWS

The Problem of Employment Stabilization. By BERTIL OHLIN. (New York: Columbia University Press, 1949. Pp. 173. $2.75.)

THIS book proceeds from the particular to the general. It opens with an account of the functioning of economies experiencing "overemployment"; it proceeds to a discussion of plans for securing greater stability within a liberal framework; it ends with an analysis of the theories of the Swedish school and of Keynes. It thus provides a convenient compendium of Professor Ohlin's views, both abstract and practical, on the theme of economic stability. In so doing, it does more. For Professor Ohlin combines the gifts of a fine theorist and a shrewd observer, and he has selected with discrimination points requiring emphasis here and now, so that this volume may be deemed a handbook and guide for thought, perhaps the best available about this all-important topic.

He writes with complete lucidity, a comfortable command of English and scholarly moderation. In some cases his statements make one wonder whether he was indeed actuated by devotion to caution, or, on the contrary, was deliberately using the rhetorical device known as *meiosis*, or understatement, so much more effective than its opposite in producing a desired impact on the mind.

The book is interspersed with sage reflections:

> ". . . On the whole, I take the optimistic view that most people will work about as well in a society where they have security—without overemployment—as in one where they have insecurity. One can, I think, go even further and expect many of them to work better in the former society than in the latter, provided that they have the stimulus of higher economic rewards in compensation for greater and better efforts. So even if a few percent of the people work less in the absence of the strong incentive of insecurity, the loss will only be a small one." (Pp. 105–6.)

And again:

> ". . . I cannot regard the perhaps somewhat greater instability of employment in a rapidly progressive society as a weighty argument for measures to reduce the rate of progress

> in order to bring about a more even distribution of income and, thereby, a relatively stable employment. Rather, the very fact that employment stabilization is somewhat more difficult of achievement in a rapidly progressing society should be a challenge to economists and politicians to work out a policy that will nevertheless maintain a reasonable degree of stability." (P. 43.)

In his opening chapter on overemployment he sets out in massive array the inconveniences and diseconomies—the bottlenecks, waiting lists, etc.—that attend that condition. The case he makes against it is so good as to take by surprise even one who has been making strenuous attempts in the same line of argument in recent years. Indeed your reviewer finds himself in such complete agreement with this chapter, as indeed with most of the book, that it may be incumbent on him to warn his reader against bias. One who has occasionally had the sense of being a voice in the wilderness must needs be warmed to enthusiasm on finding no less an authority than Professor Ohlin confirming most of his points.

The evils of overemployment are great; the cause is set out in italics (p. 7): "The state of overemployment is due to an excessive demand for investment purposes." Later Professor Ohlin writes:

> "With regard to the balance of payments position in 1948, the most characteristic element is the almost universal 'dollar scarcity.' It should not be overlooked, however, that most countries have a universal 'scarcity' of almost all kinds of foreign exchange. This simply means that they would like to buy from abroad more goods than they can pay for through exports and other credit items. The cause of this situation is primarily the state of overemployment—an unbalanced domestic economy—in which the sums people are anxious to spend each year on consumption and investment exceed the value of current output at existing prices (pp. 58–9). . . . An equilibrium between the demand for goods and the current supply—a return from a state of overemployment to a balanced employment—is called for. The way to achieve it is to keep the total value of investment within the limits set by the willingness of the people to save." (P. 61.)

In his general planning for employment stabilisation, Professor Ohlin covers ground that is already familiar to those seeking this end within a liberal framework. He has a number of original points of his own. Calling attention to the crucial part which the "acceleration principle" plays in the more recent variants of trade-cycle theory, he pertinently remarks that "the rate of change of consumption is not a factor that can be manipulated to make the whole system relatively stable " (p. 31). It is necessary therefore to concentrate upon investment. He thinks that it may be well to take special measures to secure that " costs in the building industry do not get out of line with the general income level " (p. 30). Economists have recently had to attune their ears to the expression " built in stabilisers " ; they must, I suppose, now accustom themselves to another variant : " tax systems may also be invented that have a ' built-in flexibility,' that yield large returns in booms and small ones in depressions." Professor Ohlin has a good word to say for buffer-stock schemes (p. 52), and has encountered the experts' familiar argument that the existence of stocks would have a depressing effect on prices, so that the average of prices in boom and slump taken together would be less than they would otherwise be. Is this really so ? I have never seen a thorough-going analysis. These are but a few of the many matters discussed in this connection by Professor Ohlin. He has a chapter on Swedish experience of planning on these lines.

He also has a chapter on the Swedish theory of " unused resources." He gathers together theorisings, which in total cover a large part of the ground that in Britain is associated with the name of Keynes. Apart from Wicksell, the Swedish development was largely contemporaneous with his. Keynesian economics have been noised abroad throughout the world, and the Swedish economists may well feel that some of their thunder has been stolen. In view of this, Professor Ohlin's tribute to Keynes (p. 137) is a strikingly generous one : " No work in economic theory in the last decade has played anything like so great a rôle nor has any deserved it."

In his detailed discussion of Keynes, Professor Ohlin falls into one error. " Let me mention only in passing that the assumption that savings rise faster than incomes is not essential to the theory. It makes it unnecessarily a special theory." This assumption is not made in the *General Theory.* Keynes was particularly careful to state what his assumption was :

> " The fundamental psychological law, upon which we are entitled to depend with great confidence both *a priori* from our knowledge of human nature and from the detailed facts of experience is that men are disposed, as a rule and on the average, to increase their consumption as their income increases, but not by as much as the increase in their income. . . . Whether or not a greater proportion is saved, we take it as a fundamental psychological rule of any modern community that, when its real income is increased, it will not

> increase its consumption by an equal *absolute* amount, so that a greater absolute amount must be saved, unless a large and unusual change is occurring at the same time in other factors." (Pp. 96–7.)

Thus it would be quite consistent with Keynes's assumption and would support the structure of the theory he develops if income receivers actually consumed a *larger* proportion of a larger income, always provided that they saved a larger absolute amount from it. Keynes was always anxious in discussion to point out that his theory rested on this very modest assumption. It is to be observed that this is the only example which Professor Ohlin gives in this particular passage to substantiate his statement that Keynes's theory is " a highly *special* theory and not at all a *general* theory." His principal gravamen in the pages that follow is that Keynes's theory is over-simplified.

The main gap in the Swedish doctrine, in my judgment, is the inadequacy of its theory of interest. Professor Ohlin's passage which deals with this matter appears to be quite unsatisfying (pp. 121–6). " Everything depends on the speed of reactions," he states. And he also has to bring in the ill-defined concept of " credit." He complains of Keynes's theory that it is " simple " ; it may indeed be an over-simplification, but this need not be a stumbling block if it contains the heart of the matter. This is not the place to re-open a discussion of this important question. It should be observed, however, that if it is true that Keynes's theory of interest is in its broad terms correct, the importance of this goes far beyond the theory of interest itself. For it enabled Keynes to complete a general theory of output as a whole with all its parts properly inter-related. Thus his *réclame* depended not only on his having enunciated, like the Swedish economists, certain correct propositions in regard to the causes of the trade cycle, but still more on his having related trade-cycle theory to a wider theory of equilibrium. Closing the gap in regard to interest theory was an indispensable part of this achievement.

Professor Ohlin does well to remind us that there is in Keynes a " neutral or optimum " rate of interest, namely " the natural rate in the above sense which is consistent with *full* employment given the other perameters of the system " (*General Theory*, p. 243). Keynes would not call this *the* natural rate. This reluctance, whatever its motive, was conformable with the traditions of economic theory, for from the time of Adam Smith onwards, the word natural has been used of a price which tended in the long run to establish itself under market forces. In this sense Keynes held that there were many " natural " rates. His doctrine of an optimum rate may serve to meet those critics who have complained that he divorced interest from the forces of productivity and thrift and left interest theory " hanging by its own boot straps." Keynes's *optimum* rate of interest is clearly governed by productivity and thrift.

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Five Lectures on Economic Problems. By GEORGE J. STIGLER. (London: The London School of Economics and Political Science, and Longmans, Green & Co, 1949. Pp. 65. 7*s*. 6*d*.)

IN these lectures, which were delivered at the London School of Economics, Professor Stigler deals with a large number of topics, ranging from the classical economists to the degree of monopoly in the United States of America, and from Professor Chamberlin's " groups " to the use of mathematical techniques. Although the reader is left in every case with a feeling of regret that the argument has not been developed further, the fact remains that a vast amount of thought and scholarship has been compressed into a small space. Moreover, the very incompleteness of the discourses adds in a way to their interest: *tout dire c'est rien dire.*

The argument of the first lecture, which is entitled " The Economists and Equality," may be summarised briefly. The classical writers were not much concerned with greater equality, although they respected the idea; nor were they obsessed, as is sometimes suggested, with the importance of increasing output. Both the objective of greater equality and the objective of greater output " are on an equal footing as proximate goals, and neither has content except as part of a philosophical system." In the philosophical system of the classical economists, the ultimate goal was the development of the individual: if they favoured policies which would permit a large rise in output, they did so not for a materialistic reason but rather because they were convinced that economic development in a free society would foster the qualities of self-reliance, self-discipline and independence.

Whether this interpretation of classical thought would be endorsed by other authorities on the subject, I do not know; but if it is sound, is the implication that the older writers were well ahead of the modern school of welfare economists? Professor Stigler might, indeed, have pointed out that the recent attempts to develop a chain of reasoning which is both significant and ethically neutral has proved a failure in practice—that is to say, in the practice of economists. Admittedly there is a superficial attractiveness about such projects; but the right course is surely not to avoid ethical questions, but rather to label them boldly and explicitly as such when they appear in an argument. Indeed, the attempt to avoid them merely results in leaving the assumptions implicit, and this increases enormously the dangers of political bias and of muddled thinking. Welfare theorists might be well advised to abandon for a time the embellishment of the semi-mathematical superstructure which has been erected on inadequately surveyed foundations, to read this lecture carefully and to ask what kind of human beings *our* systems would tend to produce. After all, if the people with technical knowledge are to evade the discussion of problems which are inevitably both technical and ethical, the more important part of the whole subject will become a charlatans' preserve.

In a subsequent lecture on the classical economists, Professor Stigler argues that, even from the point of view of theory, they were often at their best in analysing practical problems. He quotes, by way of example, from the Report of the Royal Commission on the Hand-loom Weavers Petition of 1835, and shows how much sophisticated theory is implicit in the judgments it contains. It is to be hoped that he will return to this subject elsewhere and deal with it at greater length. Most commentators on the history of thought have been too exclusively concerned with the more formal statements of the classical theory of value, and there is therefore scope for a new survey.

Professor Stigler's lecture on the mathematical method is moderate in tone and well balanced. As a solution to the difficulties discussed, he suggests that mathematical economists should translate their results into words—a sound, if not an original, proposal. It is unfortunate, however, that in practice " the words " tend too often to be mathematical jargon, with the result that the prose is scarcely more intelligible than the mathematics. Nor is it, after all, merely a question of words; the mathematical bias affects the degree of emphasis given to various subjects and leads to the neglect of those which are unsuitable for mathematical treatment. Reference may also be made to a footnote in which Professor Stigler suggests that more mathematics might be taught in schools in place, perhaps, of economics and civics. This is very sensible, although mathematics need not be regarded as the only substitute for such unsuitable studies.

The lecture entitled "Monopolistic Competition in Retrospect" contains an interesting survey of Chamberlain's use and subsequent abandonment of the concept of the "group." Professor Triffin's conclusions are also criticised, and it is suggested that much of the trouble has been caused by an attempt to find a comprehensive and realistic theory, instead of recognising from the outset that different models may be useful in analysing different situations. This is, no doubt, an important and somewhat neglected truth; but the argument is too cryptic and needs to be developed and illustrated at greater length.

The last lecture, "Competition in the United States," is so interesting that it should be made the basis of a much longer study. "It seems conservative," he concludes, "to estimate that the competitive industries were producing seven-tenths of the national income in 1939, and utilising more than four-fifths of the labour force." He also produces evidence which suggests that concentration began to decline in the 'thirties. (This conclusion is in general accord with the findings of other investigators, notably those of Dr. J. M. Blair.) A minor blemish in this chapter is the following statement in the preliminary discussion: "And if we tentatively accept the ratio of price to long-run marginal cost as the commercial measure of monopoly power, there are few industries in which this ratio surpasses 1·5 and virtually none in which it exceeds (say) 3." The order of magnitude is so obviously wrong that one suspects a misprint. Should it be "1·15" and "1·3"? To avoid misunderstanding, I must add that he does not use this measure in his subsequent analysis: naturally enough the calculation follows more conventional lines.

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À la Recherche d'une Discipline Économique. By M. Allais. (Paris: Centre d'Études Économétriques, 1943. Pp. 852 and 68.)

M. Allais is a very enthusiastic economist. In his introduction he tells us how disturbed he is at the lack of knowledge of economics in cultivated and scientific circles. He holds that the economic education of an *élite* class is both necessary and sufficient for an improvement in the well-being of the world. Accordingly, he sets out to write the book which he, an engineer with mathmatical training, vainly sought when he began to study economics. Claiming synthesis rather than originality, he has aimed to provide a single, coherent, and systematic account of the working of the economic machine, expressed in the mathematical language, familiarity with which he regards as a *sine qua non* of economic understanding.

In pursuit of this aim he has planned a mathematical work, in six volumes, comprising 3,000–3,500 pages. The present title is that of the first volume of 850 pages, which deals with a closed moneyless accounting system. The book begins with 200 pages of definitions and postulates ; the latter are those of the most rigorous kind of pure competition, such as perfect foresight and information, complete absence of friction and inertia, and so on. This is followed by 250 pages dealing with the necessary conditions for a stable equilibrium, both general and in relation to firms and individuals ; which is succeeded by a discussion of the equilibrium conditions themselves, and of welfare economics. The book finishes with an account, among other things, of the determination of wages, of the type of unemployment which could occur as a result of real wages being somehow held above their equilibrium values, of " optimum " populations, and of the role of rent in an economic system. The assumption of a closed moneyless economy is retained throughout.

The thoroughness and rigour with which M. Allais has ploughed through this huge field, the dimensions of which I have briefly tried to indicate, are wholly admirable. Nothing is left vague (or to the reader's imagination). Every required definition and postulate is carefully laid out, and explained ; and an attempt is made to justify each of them. The whole is thoroughly seasoned with comment on scientific method, principles of measurement, etc., and with analogies and illustrations drawn from physics and engineering. Most of this comment is apposite and true.

Where the book seems to me to be less good is in cohesion and succinctness. Thus there is much that is barely relevant to the main theme of showing how the whole economic system hangs together. For instance, complementarity is introduced ; but no clear idea emerges of its importance (if any) in general equilibrium theory. Consumer's surplus rears its head, but its relevance to welfare economics remains undiscussed. As far as synthesis is concerned, the student receives no hint that welfare economics, and consumer's surplus, and index-number theory, and the theory of consumer's behaviour, are all intimately related. (In common, apparently, with other French economists, M. Allais considers that the index-number problem was solved by M. Divisia's integral-type index.) There is also rather a lot of unnecessary repetition. One is inevitably reminded of Professor Samuelson's remark " I was simply proving the same theorems a wasteful number of times." But this is to be unfairly wise after the event. M. Allais's work was finished in 1943. What it would be fairer to say is that the author, if his educative purpose was to be fulfilled, should have been more selective. Few students, even those with the required mathematical knowledge, can be made of the same stern stuff as M. Allais. While much could have been left out with little or no loss, the student should have been given a hint of the important gaps which occur. Not only is the index-number problem not noticed, but the theory of monopolistic competition is completely ignored. Also, the assumption of "no inertia" rules out all dynamic process analysis. No cobwebs are to be found in the chapter entitled *Dynamique du Déséquilibre.*

A more disturbing feature of the book is that the author, to my mind, indulges in the vice of wishful mathematical thinking. Admittedly, he warns the reader frequently that he is only building a model—a first approximation. But at the same time, he usually leaves one with little doubt that he considers it a good approximation. This becomes most disturbing when we read the chapter on welfare economics, where we find a comprehensive and accurate, but uncritical, statement and development of Paretian theory. Applications are discussed, and the author clearly considers that this is the climax of the book, to which everything else was a prelude. But when we reach this point, we have had no discussion of any limitations, which are, or possibly should be, laid on individual choice; nor of imperfect competition; nor of the problems of finite change and indivisibility. The assumptions of perfect knowledge and complete lack of friction still lie, half-forgotten, behind us.

The student of economics who can master *À la recherche d'une Discipline Économique* will certainly have learned a great deal. He will be alive to a great many possible fallacies, of both a logical and methodological character. What I fear that he may not have learned is a proper respect for the facts. But perhaps M. Allais had planned to correct this in later volumes.

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The Theory of Fluctuations in Contemporary Economic Thought. By Sidney D. Merlin. (New York: Columbia University Press (London: Geoffrey Cumberlege), 1949. Pp. 168. 22*s*.)

The central proposition of this book is that equilibrium is a concept of little value in the analysis of an economic system whose main characteristics are growth on the one hand and fluctuation on the other. The greater part of the book is devoted to a discussion of certain leading modern theories—Swedish, Keynesian and Hicksian—which the author finds defective on this score to a greater or less degree. In particular he holds that most theories even of the short period have been to a large extent vitiated by paying inadequate attention to long-period factors influencing the marginal efficiency of capital : " the problem of cyclical fluctuations is hardly amenable to study without some reference to a long-run framework " (p. 122). A chapter is accordingly devoted to an attempt to repair this omission by enumerating some of the considerations relevant in this connection. A concluding chapter discusses briefly the dangers of a policy of reliance on theories subject to the shortcomings mentioned.

Dr. Merlin's main idea is a valuable and suggestive one with far-reaching implications; but it cannot be said that his development of it is very successful. His style is obscure and often tedious, and the reader has the greatest difficulty in extracting from the account of the various theories discussed precisely what it is that the author considers admirable and what unsatisfactory in each. On one or two occasions unmistakable *non sequiturs* are perceptible through the mist, as where we read (p. 128) : " as the scale of investment in new labour-saving equipment rises, the increase in productive capacity is likely to be relatively greater in large-scale firms than in small firms, because the large-scale firm with a sizable wage-bill may find new investment in cost-reducing equipment especially attractive." And in a work concerned mainly with methodology, it is irritating to find a consistent failure to appreciate the difference between the static-dynamic classification of theories and the quite separate distinction between " micro-economics " and " macro-economics."

These, however, are points of detail. A more serious fault is that while Dr. Merlin's readers are certainly left with the impression that all is not well with the concept of equilibrium, they would be hard put to it to discover from his pages the exact nature of the difficulty. For the most part, his criticism appears to focus on two aspects of equilibrium theory. The first of these is its neglect of the importance of uncertainty in the analysis of entrepreneurial decision-making. The presence of uncertainty is liable to invalidate any theory which ignores it; but the author well shows that few of the theories which have attempted to take explicit account of uncertainty really mark much advance on the score of realism, so that the prospects of improving our theoretical apparatus in this respect do not at the moment appear very promising. The second fault in orthodox theory with which Dr. Merlin is concerned is its tendency to treat as data factors which, even for the purposes of quite narrowly defined problems, must be accepted as variables : that is, the trend cannot be considered apart from the fluctuations, or the fluctuations in divorce from the trend. This is a perfectly fair criticism of much economic thinking; but the author does not make sufficiently clear that, in saying that long-run development is inextricably tied up with short-run fluctuations, he is doing no more than advancing a hypothesis. It is not possible to dismiss out of hand without a hearing the contrary view that fluctuations can for certain purposes be regarded as frictions and accordingly neglected. As Dr. Merlin concedes that (p. 121) " contemporary dynamic theories . . . do not provide us with a satisfactory theory of the business cycle . . . partly, it is true, because they are not concerned with the business cycle " (but with the determination of short-period equilibrium), it seems a little otiose to belabour at such length the authors of these theories for failing to provide an explanation of a phenomenon from which they deliberately abstract. Now it may very well be that such abstraction does violence to the nature of the problems at issue; but this needs to be proved, and Dr. Merlin does not provide a convincing proof either on an empirical or on a theoretical level.

In fairness to the author, it should be said that his book is probably not intended as a specimen of the sort of economics he would like to see, but rather as merely a prolegomenon. Viewed in this light, *The Theory of Fluctuations in Contemporary Economic Thought* is certainly not without value; for whether or not it contributes very much to our understanding of the questions it raises, there can be no doubt as to the importance of the questions themselves.

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Theorie van drie Stelsels van Sociaal-economisch Leven. By C. WESTSTRATE. (Leiden: Stenfert Kroese's Uitgevers-Maatschappij, N.V., Leiden, 1948. Pp. xv + 656. f.16.)

THE author of this book betrays in a footnote a somewhat sensitive anxiety that his short " Voorword " should not experience the neglect which (as he erroneously thinks) is the fate of most Forewords. He ventures to hope that it will be read. The same advice might be given with regard to the very restricted blurb which accompanies it. Confronted with such an overwhelming volume as this is, it is as well to know what the author thinks he is doing, and equally what the author is quite sure that he is not doing; and these two short statements convey, more clearly than is customary, essential guidance on these important matters.

The volume purports to be a general introduction to modern economic theory, making available for Dutch readers what at present (so it is suggested) can be found only in foreign books. This probably does less than justice to the achievements of the Dutch economists and the surprising linguistic accomplishments of the Dutch people. But at least the plea indicates that we are not here concerned with a book claiming originality. Secondly, the book is of design purely theoretical: the reader will not here be confused with undue reference to an intractable world. Professor Weststrate has in fact dealt with that aspect of the matter in another volume. Within the framework of his plan, Professor Weststrate covers—if it be not a disrespectful expression—the whole bag of tricks so far as concerns modern theory, with the exclusion of two fields which are designedly set aside for reasons which are not very convincing. He has excluded anything that involves *Ruimte*—relations in space—and accordingly location of industry and foreign trade are outside the scope of his discussion. Perhaps even less defensible in view of the plan of his book is the deliberate omission of anything relating to the provision made for the satisfaction of collective needs.

The distinguishing feature of Professor Weststrate's treatise lies in the arrangement of the matter rather than in the matter itself, though indeed his discussion of the various topics as they come along is marked by a fullness and a penetration which are alike remarkable. The basis of his discussion is foreshadowed in the somewhat uninformative, if not exactly misleading, title of the book: "The Theory of Three Systems of Social-economic Life." Professor Weststrate is impressed by the fact that our text-books reflect a world of "free-exchange," and thus portray a system which is no longer dominant. It may exist in the United States, but it is not found in Holland or in Europe, and there is little prospect that we in Europe will witness its return. To each economic system there is an appropriate "theoretical economy," though indeed they are interconnected. Professor Weststrate's purpose, as indicated in the title of this book, is accordingly to discuss the theoretical economics appropriate to three different systems: first, the centrally controlled system;

secondly, the "free-exchange" system (now defunct for us in Europe); and thirdly, the mixed variety, in which the government intervenes for certain purposes and in certain ways.

It may be doubted whether Professor Weststrate's excellent and comprehensive discussion gains from the attempt to present it in three separate containers. As he confesses early in the discussion, the three theoretical economies are not *geheel los van elkaar* (p. 21)—they are not wholly separate from each other; and there are moments of surprise in reading this book occasioned by encountering topics in the place where they are in fact encountered. Admittedly the question of population is discussed elsewhere as well, but it is here first met as if it were in some way a peculiar problem of a centrally controlled economy. Indeed, before embarking on his three systems, Professor Weststrate devotes almost a quarter of his volume to economic concepts at large, and has much to say that is of value on disproportionate returns and on costs and on other matters. Moreover, it is odd, as Professor Weststrate himself appears to realise, that the discussion of the allegedly defunct system of "free-exchange" should occupy vastly more space than the discussion of either of the other two systems. Indeed, if truth be told, there is not a great deal that can be usefully said about the completely controlled economy, apart from its definition; for it also is an economy that has never existed. Professor Weststrate's entirely justifiable procedure is to construct an ideal system, and thereafter approach reality. To see how far from reality we are at the outset, it may be of interest to note the characteristics of the model centrally controlled economy from which we start. In this initial stylised model (p. 145): (*a*) the data are completely determined; (*b*) the data are completely known to the authority; (*c*) the data are unchanging; (*d*) the various consumption goods are consumed separately; (*e*) the various goods are produced separately; (*f*) the products are completely divisible; (*g*) the controlling authority acts with complete rationality; and (*h*) the authority has its subjects completely in hand. In fact, during most of this discussion we seem to be concerned with Robinson Crusoe and his man Friday as a first inadequate approximation to this model; and when Robinson Crusoe realises that his needs are more pressing than Friday's, he is indeed in a difficulty. It is a matter on which Robinson is perhaps not a wholly impartial judge. He may have anticipated George Orwell in realising that while all animals are equal, some animals are more equal than others. In fact, as we are told on one occasion, Robinson is reduced to guessing. 'The difficulty with regard to all this method of starting with a simplified model and thereafter approaching reality by discarding the unreal assumptions one by one is that we are seldom told specifically what effect the removal of the unreal assumption has on the validity of the conclusions appropriate to the original unreal assumptions. This is a disturbing thought which must often weigh on the conscience of all who seek to instruct the young. In fact, when Professor Weststrate, in the corresponding case of the " free " economy, contemplates the complications which rush upon him as his initial assumptions are removed, he confesses somewhat plaintively (p. 565) *dan begint het ons te duizelen*—" then indeed we begin to grow dizzy ! " No doubt we do ; but it is not a promising prelude to the enunciation of clear-headed theory.

It is perhaps in Professor Weststrate's treatment of the third of his Systems—the mixed economy—that the reader will feel most clearly the inadequacy of the framework of this discussion. For the mixed economy, as is here recognised, is not a definite system, but merely a collective name for all manner of possible systems. Consequently there can be no " Theory," and in fact Professor Weststrate professes to do no more than discuss a number of points illustrating government intervention. Thus he considers in great detail the immediate and remoter effects of minimum and maximum prices, and problems relating to the action of the appropriate authority in regard to monetary policy. On the general question of Planning, Professor Weststrate justifiably reminds us of the observation of Professor Fisher that " there is probably no other word which is used so loosely as is ' planning,' and which therefore has such little value as an aid to clear thinking." But his own definition is probably not one that would be welcomed with open arms. By " planning " he understands (p. 610) " management and control by the authorities, through indirect means, of production carried on by free undertakers." Planning on this interpretation would merely amount to control and intervention, which provide the characteristics of Professor Weststrate's third " system." Unfortunately even control and intervention may be " unplanned," as the word is ordinarily understood by ordinary men.

Professor Weststrate's discussion is uniformly competent. It is the great merit of his book—or the great defect, according to the point of view—that it gives us our theory in a new sequence and a new setting ; and it may at least be claimed that this may be a stimulating and refreshing experience. The work throughout is copiously equipped with diagrams of the type with which we have become familiar in books on Imperfect Competition.

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Income, Employment and Public Policy. Essays in Honour of Alvin H. Hansen. (New York: W. W. Norton & Co. London: George Allen & Unwin, 1949. Pp. viii + 379. 21*s.*)

SIXTEEN of Professor Hansen's former pupils or close associates have contributed essays to this volume, and a large number of topics is discussed, from the consumption-function to productivity and the wage structure, and from the redistribution of income to exchange practices and the Fund. This variety of subjects, while it makes the task of the reviewer almost impossible, is entirely appropriate in a book written in honour of an economist who has contributed so much to so many different branches of his subject.

The first part of the book is concerned with the Determinants of Income and contains essays by Metzler, Domar, Duesenberry, Higgins, Goodwin and Samuelson. On the whole this is the most valuable part of the book, but it is possible to mention only three essays here: those by Metzler, Duesenberry and Goodwin respectively.

In his essay on the "Three Lags in the Circular Flow of Income," Metzler concludes that "the lag in consumers' expenditure is short relative to the lag in output"; and he infers that "unforeseen or unexpected changes in business inventories are the principal factor which equalizes actual saving and investment in periods when the discrepancies between intended saving and intended investment are large." Although his case is supported by statistics for only a short period—United States, 1929–38—it is clearly of considerable interest and importance.

The Keynesian consumption function has been under attack for many years, and a fresh onslaught is made by Duesenberry in his essay on "Income–Consumption Relations." He lays great stress upon the importance of distinguishing between the effects of a rise in incomes and a fall in incomes: if incomes rise, the initial reaction may be to save a good deal at the margin; if incomes fall, however, consumers will naturally try to maintain a position previously reached even if this involves dis-saving. There is nothing particularly new in this. But the author makes some interesting references to the data on family budgets in the U.S.A.; and he also records the results of a calculation of the connections between saving, current income and past income at the highest point previously reached. It should be noted in passing that there are two consumption-lags which are not, perhaps, always distinguished : the lag, which may well be short, before income payments can pass through people's pockets and be spent; and the lag, which may well be long, before a change in income induces people to change their expenditure habits.

Duesenberry also tries to account for the constancy in the average propensity to consume as indicated by Kuznets' figures for a long period. But the explanation offered on pp. 77–8 seems to me obscure, and the constancy still remains somewhat mysterious. (In saying this, I do not wish to imply that a downward trend might reasonably have been anticipated; it is doubtful whether there is much *a priori* justification for expecting any particular trend.)

The connection between cycles and trends is examined by Goodwin in his chapter on " Secular and Cyclical Aspects." He points out that it may be misleading to deduce conclusions about cyclical propensities from average decade figures—although the usual fallacy has, I think, been the reverse of this. The mathematics of cycle and trend are set out, but so much ground is covered in this intricate essay that no further commentary can be attempted here.

Part II begins with a chapter on Redistribution by McCord Wright, who reaches his usual high standard in discussing sociological problems. (Some of his fellow contributors might benefit from a careful study of this essay.) This is followed by an inquiry by Alexander into the reasons for the opposition in the U.S.A. to deficit spending, which should be of interest to the British reader. He might perhaps have added to his list of difficulties the speciousness of some of the arguments put forward by the supporters of deficit finance. Lerner provides an example in a subsequent chapter in which he quotes the confusing statement that the national debt is not a burden. Fortunately this topic is satisfactorily elucidated, and Lerner reminds the reader that some taxes may always be " bad taxes " ! Cary Brown's examination of " Business-Income Taxation and Investment Incentives " is also useful; this is an essay which might have been longer. There is also a valuable discussion by Musgrave of " Credit Controls, Interest Rates and Management of Public Debt."

Stettners' account of the views of Carl Dietzel will be of interest to the historian; but his enthusiasm seems exaggerated and he pays too little regard to historical perspective. The book concludes with two essays of considerable interest; one by Dunlop on "Productivity and the Wage Structure," and the other by Alice Bourneuf on "Exchange Practices and the Fund."

Enough has been said to indicate the scope of the book. It may now be asked whether the authors have made progress in developing those branches of economics which are peculiarly associated with the name of Professor Hansen. Public finance may be mentioned first, and it has been made clear above that there are useful contributions under this heading. When, however, one turns to the theory of stagnation, it is of interest to note that nothing is said which makes it more plausible, although many contributors appear to accept it without reservation. As for employment policy, the most striking defect is the scanty treatment of the administrative difficulties which ought to have received a good deal of attention from those who are interested in the practical application of Hansen's ideas. (It is true that Bishop has described very neatly the Alternative Expansionist Fiscal Policies, but only in theoretical terms.) Nor is anything like sufficient attention devoted to structural problems, and a characteristic defect of the Keynes–Hansen approach is not, therefore, removed. Admittedly one essay must be regarded as exceptional in this respect: Perloff lays much stress on sectional problems, but even in his essay administrative difficulties are neglected.

The book is not quite free from dogmatism or unmarred by clichés. For example, it seems somewhat rash to take it for granted, as many contributors do, that monopolistic developments always reduce the volume of investment. It is also perhaps surprising that contributors are so wont to preface their arguments with phrases such as: "In a capitalist economy . . ." There would, of course, be no reason to cavil at this if their subsequent comments related to those difficulties which are peculiar to capitalism; but in what is probably the majority of cases they are discussing problems which must be faced in any highly developed and dynamic economy. For example, a certain amount of instability must always be anticipated in the industries which produce semi-durable goods—unless, of course, it is decided to disregard urgent needs and to abandon the objective of "production for use"!

It is regrettable that the penultimate paragraph of this review should have been so carping in tone. For taken as a whole, this is a stimulating volume of essays and a worthy tribute to Professor Hansen.

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The Science of Wealth. By J. A. HOBSON. Revised by R. F. HARROD. (London: Oxford University Press (Geoffrey Cumberlege), Fourth Edition, 1950. Pp. ix + 214. 5*s.*)

The Science of Wealth is by no means the most significant of Hobson's many works : it was not intended to be. Nevertheless, this new edition is well worthwhile, for the book contains not only a more lucid description of the industrial system than can be found in many more recent elementary texts, but also a detailed exposition of the author's theory of unproductive surpluses. Hobson's other and more publicised theory, the theory of industrial depressions, appears only briefly in this book, although the argument at various points depends on it to a greater extent than Mr. Harrod's preface would suggest.

The central concern of the book is with the organisation and functioning of the industrial system rather than with the theory of value and distribution : this concern is reflected in the structure of the argument. Thus, while the first chapter presents an orthodox discussion of wealth, it does not lead into the theory of prices (which appears much later and only as part of the superstructure of Hobson's argument), but instead into a description of how firms and industries are linked into an industrial system, and how that system works. This part of the book is a masterpiece of exposition : Hobson conveys in very brief compass a clear understanding of the mutual interdependence of economic processes, and of the flow of goods and money through the different stages of production.

The next five chapters are devoted to distribution. Hobson is chiefly interested in the relation between distribution and industrial efficiency, and in this connection develops his theory of unproductive surpluses. He divides payments to factors into three elements : " costs," which are spent in maintaining the quantity and quality of existing factors ; " productive surpluses," which are spent in augmenting factors ; and " unproductive surpluses," which are not so spent. In the unproductive surpluses Hobson finds the source of industrial waste and inefficiency, and of conflicts of economic interest.

Surpluses arise from scarcity, natural or artificial; Hobson investigates factor incomes for causes of scarcity, and comes to two major conclusions. First, labour rarely receives unproductive surpluses, and sometimes receives less than its " costs," because " labour is the only factor of which the supply generally and permanently exceeds the demand " (p. 94—Hobson's theory of depression is here implicit). Second, profits rather than rents absorb the bulk of unproductive surpluses in modern communities. The presence of large unproductive surpluses accruing as profits justifies for Hobson both the organised labour movement and the growing role of the State in economic life, a role which he regards as both desirable and inevitable.

While most of the book elaborates on the theory of unproductive surpluses, there are some interesting discussions of unrelated topics. The chapter on wages, for example, contains a good treatment of the problems of family size and women's wages, and the chapter on foreign trade explicitly develops the " export of unemployment " argument for protection.

The most interesting part of the book, however, is the theory of unproductive surpluses, a notion which has always intrigued economists but which has never been satisfactorily refined. In his " Epilogue," Mr. Harrod outlines three difficulties with Hobson's concept. First, Hobson fails to distinguish between natural and artificial scarcity: allocative efficiency requires the payment of surpluses arising from the former, but the elimination of surpluses arising from the latter. Second, except in the case of land rent, the definition of surplus is imprecise, not only because it ignores the margin at which no surplus emerges but also because the " cost " component may itself depend on the factor-price paid. Third, marketability of assets prevents identification of current owners of scarce factors with the recipients of surpluses.

These difficulties are undoubtedly genuine; but to raise them is to place Hobson in too modern a tradition. For Hobson defines his surpluses with reference to objective or real costs, not with reference to subjective or opportunity costs as a modern theorist would do. His is a thoroughly classical endeavour, and it raises problems of a different sort. Measurement, for example, is more difficult. Also, unless human wants rank absolutely in the order of self-preservation, self-improvement, self-enjoyment, an attempt to eliminate the " surplus " spent on the last by measures reducing money income would necessarily fail.

More generally, can we accept Hobson's suggestion that all income should be spent on either maintenance or improvement? That would be robot economics with a vengeance, and certainly the other kind of Hobson's choice! Yet if some unproductive surplus is allowed, another criterion is required for distinguishing the legitimate from the illegitimate.

To raise these questions is not to deny all usefulness to the classical concept of surplus, which may indeed be more helpful for some problems than the modern concept; but it does underline the difficulty of relating it to the operation of the price system and consumers' sovereignty. Hobson reminds us of a problem, but he does not solve it.

HARRY G. JOHNSON

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The Measure of Gold. The Role of Gold as International Money. By W. J. BUSSCHAU. (South Africa : Central News Agency, Ltd., 1949. Pp. 164 + xi. 12*s.* 6*d.*)

THE author of this book, at present employed in a managerial capacity by a gold-mining finance house, is well-known for his previous excellent work on *The Theory of Gold Supply.* Contrary to the promise of its sub-title, the present volume is not a companion study of the demand for gold, but an openly partisan argument for a doubling of the world price of gold.

The central thesis of the work reduces to three propositions. First, gold is the only real money, the only means of making final payments; all other money is merely a device for avoiding final payments, and while such gold substitutes may work satisfactorily *within* a country, they are not acceptable *between* countries. Second, adequate liquidity is essential to the maintenance of high income and employment and the avoidance of deflation. Third, the present price of gold in terms of national currencies (which Dr. Busschau, by a quaint sophistry of his own, prefers to call the " measure " of gold) is too low to give an adequate degree of international liquidity; the author reckons that a doubling of the price of gold is required. These bare bones are supplemented by four chapters of monetary theory, vast quantities of statistics, a penultimate chapter attributing interwar financial difficulties to wrong gold prices and a final chapter summarising the argument and rebutting criticisms of an earlier statement of the author's position.

The first proposition is obviously crucial to the entire argument; yet to accept it requires an act of faith, rather than a recognition of fact as the author assumes. In the first place there seems to be some fallacy in the use of the term "final payment": either it means payment in goods and services which are consumed by the recipient and so disappear from the economic system, in which case neither gold nor any other form of money is a means of final payment; or it means payment in generally acceptable media of exchange, in which case other forms of money as well as gold are means of final payment. Second, and more important, there is no basis for the assumption that gold is the only international money. Even under the gold standard, international payments were largely made in a few "key" currencies; and, as the history of the sterling area shows, the use of a currency as international money does not depend on its being convertible into gold. International means of payment can also be provided through international credit institutions, such as the International Monetary Fund or the European Payments Union. Finally, it would seem that the international role of gold at the present time derives largely from its convertibility into dollars, not, as Dr. Busschau would have it (p. 34), the other way around.

In establishing the second proposition, the author employs an accounting or balance-sheet approach to monetary theory. Such an approach is in line with modern trends, and can be highly illuminating, but it requires careful handling if misleading conclusions are to be avoided. In the present case, the accountancy emphasis on asset values leads to the conclusions that a rise in interest-rates is to the disadvantage of long-term creditors (p. 55) and that an economy is more vulnerable to changes in confidence the longer the tenor of the debts which constitute the credit structure (p. 45); on this basis Dr. Dalton was a model of financial soundness. The balance-sheet approach also contains nothing to support the identification of gold with liquidity required by the central thesis of the book.

With reference to the third proposition, one may reasonably doubt both that the world's salvation lies in increased liquidity and that a doubling of the price of gold is the right method for going about it. No limited increase in the stock of international reserves could withstand a persistent drain to the western hemisphere, indeed, such an increase might accelerate the drain; and, apart altogether from the flat American opposition to a change in the dollar price of gold, it would be difficult to think of a more inefficient and unjust method of distributing increases in international reserves than in proportion to current gold holdings and gold-producing capacity.

There might be a case, on some other grounds, for raising the price of gold; but Dr. Busschau's own argument is far from carrying conviction. It is regrettable that he has not chosen to produce the dispassionate and objective study of the monetary role of gold which his previous book shows him to be admirably qualified to write.

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Marx, his time and ours. By RUDOLF SCHLESINGER. International Library of Sociology and Social Reconstruction. (London: Routlege & Kegan Paul, 1950. Pp. xi + 440. 30*s.*)

THERE are two manners of bringing Marx "up to date". The first is that of Lenin in, for example, his essay on *Imperialism*. Here Marx is the author of a doctrine of revolution, and the practising revolutionary of the next generation must adapt the pronouncements of the accepted prophet to the changing situation. This manner needs no defence. There is no puzzle why *Marx* should be selected to be brought up to date, or why it is necessary to bring him up to date; the purpose of the project is clear, and the project itself is in the highest degree practical. All that the interpreter must avoid is the appearance of being a revisionist.

For the second manner, Marx is the author of a scientific socio-economic theory, a set of ideas not all of which have worn equally well in the intervening century; and the task of the interpreter is to examine the more important of these in the light of what subsequent scientific investigations and the turn of events have produced. Marx was a social theorist of the nineteenth century, and to discern how much of his theory can withstand twentieth century criticism, to show what in detail needs correction, and how it may be corrected, is a reputable academic enterprise. This is the project of Dr. Schlesinger.

But it is a project which needs some defence. Marx, like Comte or Buckle, was a social theorist; and when we are offered a work, such as this, of immense erudition, which invites us to embark upon a minute and critical examination of Marx's ideas, it may perhaps be asked why this particular social theorist should be selected for a treatment which if applied to Comte or Buckle would be generally agreed to be eccentric, if not absurd. In the history of European thought, Aristotle alone has received similar treatment; and many chapters of history of Aristotelianism belong by general consent to the history of folly.

Dr. Schlesinger's answer is twofold. First, he suggests that Marx's theory, in general, stands; it is true; the social transformation foretold by Marx is in fact taking place: and when so much is true it is worthwhile to correct and bring up to date the details where Marx went astray. Marx is compared to Newton; until "Einstein" appears we must all be Marxists. Not everyone will find this answer convincing; to many *Das Kapital* appears to be more closely analogous to Burton's *Anatomy of Melancholy* than to Newton's *Principia.* But if for the sake of argument we accept Dr. Schlesinger's point of view, it would be difficult to imagine a more meticulous and scholarly examination of Marx's ideas than is provided here In five Parts and nineteen closely argued chapters, the main tenets of Marxism are microscopically examined and scrupulously corrected. Those who are not actually carried away by the point of view will judge some of the meticulousness to be pedantry.

Dr. Schlesinger's second consideration is that, truth or error apart, Marx's writings (and particularly *Das Kapital*) have been so influential that they merit treatment which would be absurd in the case of other less influential works. This, broadly speaking, is perhaps true. But when Dr. Schlesinger shows his hand by suggesting that Communism as a doctrine commands the assent of the majority of the class conscious inhabitants of the western world, he is either making a tautological statement or revealing a gross over-estimate of the influence of Karl Marx. The truth is that while certain individuals have, for a variety of reasons (some by genuine conviction of its truth), adopted the Marxist theory, no society has yet accepted it as a pattern of life except at the point of the sword, and many have resisted it when to resist entailed extinction. What is influential in the world to-day is not *Das Kapital* but the Russian army.

But, whatever the value of the enterprise, it would be hard to find a writer better equipped that Dr. Schlesinger to carry it out. It requires an immense knowledge of the fortunes of Marxism and the history of the politics of international socialism, and it calls for a minute acquaintance with the critics of Marx, especially in economic theory; in both these fields, Dr. Schlesinger's care and erudition never falter. On the whole he is stronger in continental than English history; but that perhaps is to be expected. And if it is not foolhardy to offer a summary conclusion for so long and intricate a book, it may be said that, while others have detected this or that general shortcoming in Marx's ideas—failure to appreciate the force of nationality, exaggeration of the weakness of "capitalism," caricature of the class structure of European society, error about the early history of mankind, and so on—Dr. Schleswiger has rummaged out, exactly defined and lovingly corrected *every* errancy of detail.

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Civitas Humana: a Humane Order of Society. By WILHELM RÖPKE. (London: William Hodge, 1948. Pp. xi + 235. 21*s.*)

THIS is an unfortunate publication. It looks like a limp green text-book for a correspondence college, a manual for lathe-minders or a volume of mathematical tables. Röpke is Professor of Economics at the Graduate Institute of International Studies, Geneva, and his German peeps through the English of his translator with a dreadful squint. Occasionally it fails to make any sense at all. The notes at the end of the chapters often remind one of Count Smorltork.

> "I (p. 169). The Reproach of Romanticism. The expression ' Romanticism ' would seem urgently to require a fresh interpretation . . . 2 (p. 170). The Motorcar as a cultural problem. A satisfactory philosophy of the motor-car . . . would of course have to be carefully formulated . . ."

Drastically pruned, done into decent English, with the notes relegated to the end, bound and printed with an eye to the reader's æsthetic comfort, Professor Röpke's work might stand a chance of reaching the public for whom it is intended. Moreover, it would then be worth a guinea. It ought to reach as wide a public as possible, for it is essentially one of the most brilliant and humane works of spiritual diagnosis of our time. Even in its present unfortunate dress, it makes Karl Mannheim look one-eyed and Nicolas Berdyaev dreary.

Wilhelm Röpke is a liberal—a liberal after the style of Matthew Arnold—chastened by experience. He believes in Market Economy, or capitalism without tears. He wants the best of both worlds: private initiative and what he calls "liberal interventionism." He sees capitalism as "the distorted and soiled form which market economy assumed in the economic history of the last hundred years." Seeing "the Market as the unsurpassed Master of Calculation," and any other method of calculation as involving the destruction of humane values at the hands of totalitarianism, he seeks what he calls "The Third Way," a way that is neither capitalist nor collectivist. He has the necessary boldness and eclecticism for the task. He asks us to put away "democratic prudery" and acknowledge frankly that not only private property, but also unequal property, is a pre-requisite to moral freedom and civilised living. He is prepared to go into alliance with federalists, distributists and Catholics, winnowing out their social teaching from their dogmatics for the greater good of a free society.

What lends Professor Röpke's book authority and authenticity, however, is the fact that its author is a man with roots in an ancient and beloved soil. The plea for "the organic community," a "humane order of society," "integration" and so forth has been greatly discredited by the cosmopolitan sophistication of its advocates. One feels, all too often, that the kind of society they profess to desire would be the very last kind of society in which they would be content to live. Professor Röpke, on the other hand, knows what he is talking about. He brings to bear the historic social experience of the Swiss upon the world of great states, monopoly capitalism, collectivist tyranny and the superstitions of scientism and technocracy. It is as if Jean-Jacques Rousseau, stripped of his egotism and made patient of detail, had returned to train once more the cannon of Genevan social democracy upon the shams and shibboleths of a Europe which has waxed wicked by a perverse, though legitimate, development of his own doctrines. Professor Röpke himself recognises in Rousseau the father of "the democratic dogmatism . . . which breaks into a theory of totalitarianism . . . the worst despotism in the name of the sovereignty of the people," and an exponent of "the cardinal error of all 'radical thought': that humanity is intrinsically good . . ." But, like Rousseau, he loathes the "colossal" in all its forms, the tool that turns in the hand of the man who made it, the undermining of individual initiative in the name of welfare, the withering of the roots of social affection, patriotism, and neighbourly love by the weed-killer of misplaced interventionism.

Civitas Humana, as a diagnosis of our present ills, follows a familiar pattern. Many others have exposed the disease of hubris of the intellect, the cult of the self-sufficient man, the latter-day superstitions of scientism and positivism, *la trahison des* *clercs;* the soulless congestion and the degraded values of a proletarianised society. Professor Röpke does all this, and does it better than most. His historical analysis of the process of disintegration of civilised and humane society in the West since the Enlightenment is masterly. But he does something more, and something more difficult. He defends reason against the rationalists, philosophy against the *philosophes,* science against scientism, market economy against capitalism. A Protestant and a humanist himself, he makes no concessions to the intuitionists, the transcendentalists, the neo-Thomists or the hankerers after institutional authority in morals or politics. The attack upon the usurpations of scientism and positivism in our day has been too often, and for too long, in the hands of the advocates of an older, and even more discredited, authority. Here, at last, is the Protestant challenge. *Civitas Humana* has saved for us all that is best in the achievements of the modern spirit, and has shown us how to depart from its barren courses without doubling upon our tracks. It is what uncommitted minds have been waiting for. Is it too much to hope that it may be retranslated, re-titled, severely pruned and put into the hands of as many people as possible in an attractive edition?

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Die Entwicklung der äusseren Kaufkraft des Franken in den Jahren 1925–1938. By K. SCHNEIDER. (Bern : A. Francke. 1949. Pp. xiv + 133. S.fr. 14·40.)

THIS book, which has for its central subject the overvaluation of the Swiss franc in the period 1929–36, the last-ditch battle of the Continental gold block and the final devaluation in the autumn of 1936, has been given unexpected topicality by the devaluation of September 1949. It is interesting to speculate on the similarities and dissimilarities of the two events, but in any case this book well deserves to be known in its own right among English-speaking readers.

The author starts with 1929, or in other cases 1925–29, as an equilibrium position, and retrospectively it is certainly remarkable in what degree over the five years 1925–29 the Swiss, British and United States data move together. By comparing Swiss wholesale prices, retail prices and wage levels with the corresponding British and United States indices, and by a comparison of the home-produced and imported elements within the Swiss wholesale price index itself, the author shows the steady overvaluation of the Swiss franc during 1929–36, reaching up to 35%. No elaborate statistical techniques and only the simplest theoretical tools are used, but the relevant facts are readily isolated by simple "common-sense" techniques—perhaps the author was fortunate in his subject matter in that respect.

The analysis certainly brings out the amazing economic robustness of the Swiss economy. Think of an economy with an export quota higher than that of Great Britain which managed to postpone its devaluation by five years beyond the devaluation and foreign-exchange restrictions of its two principal customers and competitors and by three years beyond that of the United States; which could sustain price disparities much greater than those of Great Britain in 1925–34; which could sustain during five years a decline in export volume by over 50% and yet at the same time managed not only to maintain but even to increase its imports, in spite of a mild development of protectionist devices; which managed all that with a total balance-of-payments deficit in its current accounts which over the five years taken together did not offset its surplus in a single normal previous year, such as 1928 or 1929; which when it did in the end devalue did so with gold and exchange reserves much higher than in 1929. An enviable country indeed!

The author himself does not seem aware of the strength thus displayed. To him the decline in exports, maintenance of imports and the deterioration in the balance of payments are signs of fundamental disequilibrium which go to prove that devaluation should have taken place much earlier, in 1933, 1931 or perhaps even in 1929. In particular, he completely fails to see the advantage derived by Switzerland through improved terms of trade. Good terms of trade are the one great advantage of overvalued currencies, and in particular conditions this may go a long way to offset their disadvantages. Using the tonnage figures provided by the author (admittedly imperfect substitutes for economic volume) one finds that the unit value of imports per ton fell between 1929 and 1935 by no less than 51%, while that of exports fell only by 15%. One would have liked to know what such an improvement in terms of trade meant for real national income and how far it offset the decline in home output and volume of foreign trade. The neglect of this countervailing aspect of the matter is the chief weakness of this book.

The book throws interesting incidental light on the overvaluation of sterling in 1925–31 and again in 1938 even in relation to "dear Switzerland," and also on the fact that productivity in Switzerland between 1925 and 1937 seems to have advanced at about the same rate as in Great Britain but at a lower rate than in the United States.

It is interesting to note that even the extremely mild Swiss brand of protectionism was more effective in reducing imports than was the 30% devaluation of 1936. The long delay in devaluation is attributed mainly to the inflow of hot money which concealed the underlying disequilibrium from the Swiss authorities. Perhaps Sir Stafford Cripps should be thankful for the drain of foreign reserves, since this prevented any delay in correcting the overvaluation of sterling in relation to the dollar.

It is a pity that the tables are not presented in constant prices (only current prices are given) and that no data of domestic output and employment are given. This makes it in places rather difficult to examine the arguments and conclusions presented by the author.

It is to be hoped that this book will find English-speaking readers, and that perhaps it may stimulate similar investigation into the 1925–31 period in Great Britain and the 1929–33 period in the United States. The book is a triumphant vindication of the "simpler economics." Even simple tools purposefully used can give us a better understanding of the currency factor in international economic relations.

H. W. SINGER

Lake Success, U.S.A.

Langfristige Auslandskredite. By A. RADBRUCH. (Tübingen: J. C. B. Mohr (Paul Siebeck), 1949. Pp. 222, DM 18.—)

THIS book represents an important contribution to the literature on long-term international capital movements. If one realises the difficulties under which the author must have been working in writing it—only too painfully obvious from his scrappy bibliography—one is filled with respect for his scholastic achievement.

The main theme of the author is that for smooth repayment, long-term international lending must lead to the "formation of export capital," *i.e.*, to export-promoting or import-saving investment, and that general increases in productivity in the borrowing countries are not enough. In further investigation of the process of forming such export capital, the author stresses that the position is very different according to the economic structure of the borrowing country, and for purposes of further analysis distinguishes between " new countries " (under-populated under-developed countries), " half capitalistic countries " (over-populated under-developed countries), and " capitalistic over-consumption countries " (industrialised countries in need of reconstruction). In his view, the prospects of repayment without transfer difficulties are best in the first category of the under-populated under-developed countries, provided that the original investment consisted in the promotion of primary commodities for exports, or of consumption-goods industries which substitute for imports. At the same time the author is aware of, although he does not perhaps stress sufficiently, the transfer difficulties which may arise even in the case of promotion of primary production for export in under-developed countries, as a result of inelastic demand, and adverse changes in terms of trade.

Repayment will be especially difficult in the case of reconstruction loans to industrialised countries, and the author favours methods of minimising repayment difficulties by governmental controls of the use of credits, as well as possible provisions for transfer in kind. The implied application of his views is that western European countries, and western Germany in particular, should be very careful in accepting new indebtedness to the United States.

Most of the factual material is derived from Viner's analysis of the Canadian Balance of International Indebtedness before 1914, and from an analysis of German borrowing in the later 1920s.

If these conclusions appear very common sense or even humdrum, the argument leading up to them is interesting and often novel. One may feel that his initial assumption, that (even though foreign investment may be a continuous process) the individual act of investment must be assumed to be capable of repayment by individual real transfer, is a little too limited. As to the stage of transferring the credit to the borrowing country, the author agrees with Keynes that such transfer is a more or less automatic consequence of an active balance of trade on the part of the creditor country, and is not normally accompanied by a shift in the terms of trade favourable to the borrowing country. In this, one feels he is much more realistic than the prevailing view. Thus there is nothing to compensate for the subsequent unfavourable shift in terms of trade for the repaying debtor country.

Now and then one feels that the author's views on under-developed countries have an air of unreality. For instance, when he explains the high rate of interest in the Amazon region as due to an anticipation of the high marginal efficiency of capital there, "as soon as transport possibilities are improved," this strikes one as extremely far-fetched. Surely, it is the scarcity of present eggs rather than the imagination of an abundance of unhatched future eggs which one has to consider?

H. W. SINGER

Lake Success, U.S.A.

Marktwirtschaft und Sovietwirtschaft. Ein Vergleich. VON ADOLF WEBER. (München: Richard Pflaum Verlag, 1949. Pp. xvi + 455. DM. 14)

IN this learned volume, Professor Adolf Weber of Munich University, who has survived the Nazi interregnum without loss of dignity, is comparing the performances of price systems regulated by consumers' preference (*Marktwirtschaft*) with dictatorial allocation systems (*Befehlswirtschaft*), managed either directly by a producer state, as in Russia, or indirectly by government decrees as in Nazi Germany. His yardstick is composed of "quantitive output," "distribution according to economic merit" and "social security."

The first section describes the rise and the functions of the modern price system and evaluates its results. Professor Weber has not constructed a model which would run smoothly, since all essential suppositions for its proper working are being fulfilled, but which has existed nowhere. His price system functions within a concrete society composed of associations of consumers, workers, owners of capital and entrepreneurs which is connected with other societies. It naturally reflects pre-war Germany more vividly than Britain or the United States. After a short discussion on the difficulties inherent in every "Dictatorial Economy" the Nazi economy, as representative of an indirect dictatorial economy, is analysed. Its "barrack-room socialism" did not subvert Germany's social structure, but it made it function by orders from above. This chapter, describing the application of army government to the economics of a civil society, is perhaps the most instructive part of the book; it succeeded—as Professor Weber dispassionately observes—in the short run, its objective being preparation for waging a war.

The final section deals with Russia's "Direct Dictatorial Economy," its rise and organisation, its accumulation of capital, its rewards for labour, and with the role of money, price and credit played in it. Professor Weber's conclusion, that neither exploitation nor inequality have ceased, is inevitable. As capital according to Marxism has to be accumulated by exploitation, peasants and workers must be exploited. Communist doctrine is, moreover, not really egalitarian. The concept of equality is derived from the Christian belief, that all men are equal before God in as much as their immortal souls are of equal concern to Him. The communist slogan, " from each according to his ability, to each according to his needs," is anything but egalitarian. It could be called so only on the assumption that everybody's needs and everybody's abilities were equal, and in that case, why stress distinctions? Professor Weber's learning and impartiality are conspicuous; yet he need not have taken the testimony of the Dean of Canterbury very seriously. He has written an excellent text-book on concrete modern economics.

It is hardly his fault that he has been unable to answer unequivocably the question he himself had posed: which system gives the better performance? The two pursue diametrically opposite ends. The price system is a wealth and welfare system; the Soviet system is a war system. Its main object is not the best distribution of a maximum output, but a maximum output of non-productive war goods, and the satisfaction of individual consumer's wants to the degree only that is necessary for reaching this maximum. This policy must affect total output unfavourably, since the production chain snaps when a tank rolls from the assembly line, but runs on in the case of a tractor. The lack of incentives in the shape of ample consumers' goods must lower the productivity of labour. Russian statistics are too much manipulated to make possible a detailed comparison between output and effort. Yet in agriculture, where the technical revolution has been most thorough, the answer seems clear: estimated wheat yields, which at 11·9 bushels per acre in 1935–39 were not much below the 13·2 bushels of the United States, have fallen to 10·8 bushels in 1948; in the United States they have risen to 18·4, and in France from 22·8 to 27.

Russia, even to-day, has large undeveloped resources. She has remained a scarcity economy, the needs of which must be satisfied by squeezing greater surplus value from her subjects than in mature price economies, who can draw on their predecessors' accumulations. In these circumstances Russia is always " over-employed." As labour can be shifted anywhere, Russia can have no large-scale unemployment. The Soviets have divided their labour force into the sticky and the completely mobile; the latter, the millions in labour concentration camps, can be ordered about at will, thus allowing relative immobility to the former. By the nature of things Professor Weber's yardstick has but limited applicability; he has used it as well as the available material permitted. The result certainly bears out his personal preference for the price system where human values are concerned : even in the apparently completely depersonalised society of Soviet Russia, happiness remains subjective; but no gauge for measuring it has yet been devised.

M. J. BONN

London.

Friedrich List. By CARL BRINKMANN. (Berlin and München : Duncker & Humblot, 1949. Pp. 359. DM. 16.)

FRIEDRICH LIST was one of the most remarkable men of nineteen-century Germany. Civil Servant; professor; agitator for a customs union; political prisoner; emigrant to the U.S.; coal-mine owner; railway builder; American Consul after his return to Germany; financially unsuccessful railway promotor in Germany, France, Belgium and Austria; newspaper owner, editor, journalist; advocate at a Central European Union and of an Anglo-German alliance; author of brilliantly written books—chief among them the bible of modern economic nationalism—*Das System der Nationalen Arbeit*; and finally, after hopeless defeat in all schemes, a suicide before his sixtieth year. Few lives have been so full of adventure, glory and tragic failure, and, after his death, of lasting influence. The Germans revere him as a great democratic patriot who, but for the narrowness of their political stage, would have become a leading actor in world affairs. They see in him a great theorist, who ranks near, if not above, Adam Smith or Ricardo.

The List Society, founded in his honour, has published a monumental edition of his works, including his voluminous correspondence. Making good use of this vast material, Professor Friedrich Lenz produced in 1936 a scholarly biography of List, showing the man and his work in the setting of the age in which he lived. Now Professor Carl Brinkmann of Tübingen has again gone over the same ground. He has produced a very readable book, bringing out a number of hitherto unknown details, and interpreting anew some well-known facts. He has sought to paint his hero's portrait against the sociological background, and to demonstrate once for all the important role he has played as discoverer of novel economic truth. The List who emerges from his pages, possesses an original mind, capable of brilliant intuitive flashes, great gifts as a writer, imagination and at the same time a flair for business. But he is arrogant; impatient, uncouth, boastful, unsteady, not always truthful, both cunning and naïve; there may even be a pathological streak in him. One begins to understand from Professor Brinkmann's ample quotations, why this man, who started under favourable auspices, and whose evident genius impressed many first-rate contemporaries, ended his life in despair. He was an upright democrat, with an almost wild-western unconcern for the conventions, yet, being without a steady income, he had to try hard to get Government employment. One begins to doubt whether this robust dreamer of dreams, a blend of Main Street and Bohemia, would have fared better in more favourable surroundings; for he was not good at team work. Professor Brinkmann does not make his hero's portrait more attractive by sprinkling it with gushing laudatory epithets: grandiose, magnificent, full of genius, marvellous, artistic and so on.

There have always been two types of economists: those who pursue concrete political aims and fashion theories to justify policies, and those who analyse the structure and functions of a society with the object of understanding it, who do not mind whether or not their principles are used for directing policies. List belonged to the first group. He was a very brilliant economic politician who should be compared to Cobden rather than to Smith or Ricardo. A great agitator, he was quite justified in claiming to have discovered fundamentally novel truths, such as the theory of productive forces, or a *national* economy as opposed to a *political* or *cosmopolitan* (universalist would be a better term) economy. Professor Brinkmann accepts, nay even enlarges, these claims. Yet the assumption that the British "Classics" were bent on constructing abstract theoretic models of universal validity, is hardly correct. They analysed the economic structure of British society, which at that time was the most advanced and most complicated economy—though Adam Smith did not limit himself to this task. Their theories of population, rent, foreign trade or colonisation are not based on static conditions. The concept of a national economy underlay the Physiocrat system; it was much more uncomprisingly adopted by Fichte or by Adam Müller than by List.

Professor Brinkmann makes it difficult for one to do justice to List, by hoisting him into a place where he does not belong, and by endowing him with almost superhuman qualities of intuition and prescience. He tries to persuade one that List had discovered nearly everything worth discovering in economics, so that one's task seems almost to be limited to developing List's findings.

List's influence on economic policy was enormous. He materialised nationalism—Professor Brinkmann would probably say he spiritualised materialism. His theory of the protection of infant industries was acclaimed all the world over, wherever an attempt was made to start an industrial revolution; even free traders have accepted it. Yet it may have done infinite harm. It accelerated a process in many countries, the ultimate results of which would have been far less upsetting had they been more gradual. It may soon be outmoded, for the Communists have devised far more effective methods for industrialising backward peoples.

M. J. BONN

London.

British Railways and Economic Recovery. By KENNETH H. JOHNSTON. (London: Clerke & Cockeran. 1949. Pp. 352. 18s.)

MR. KENNETH JOHNSTON has performed a remarkable feat of abstraction. He has managed to bring out in 1949 a book recommending the nationalisation of railways as a cure for the alleged extravagance and inefficiency with which the amalgamated companies were operated before the war without discussing the Transport Act of 1947, and without even mentioning the fact, except by the way and then only indirectly, that the British Railways have been publicly owned since January 1, 1948. He states at length a case for wholesale electrification as the principal means through which British Railways might make their contribution to economic recovery, without considering the limits which have had to be placed on the rate of new capital investment in Great Britain since disinflation became the official policy in 1947. Instead he prefers to rely upon arguments taking us back long before the First World War and upon some bare comparisons of rates and fares in Great Britain with other (nationalised) railways abroad.

The reviewer is certainly attracted by the author's vision of a wholly electrified system. Mile-a-minute passenger trains between all principal towns, departures every half hour and through braked freights running at express passenger speeds kindle admiring memories of the (privately owned) Pennsylvania Railroad's operations between Washington, Baltimore, Philadelphia and New York. He agrees also with much that Mr. Johnston has to say. But he dislikes the author's way of saying it, the length at which it is said and the frequency with which the same points are made over and over again. Polemical argument, for that is the main content of this book, grows tiresome when expanded to 300 pages, many of which contain extreme and unproven assumptions—that the road-haulage trade does not lend itself to a stable and competitive organisation, for example, and that there is nothing which privately operated railways have done which would not be better done and more cheaply under State ownership (both on p. 55). The case of the Pennsylvania Railroad just cited certainly contradicts the second piece of dogma. Was it also really necessary to devote so much of the last part of the book to a demonstration that two pamphlets issued by the amalgamated companies just after the war and before nationalisation were pieces of audacious and misleading propaganda?

The reviewer cannot share the conviction that the greater economy of burning coal in power-stations rather than under locomotive boilers will lead to the spectacular reductions in railway costs foreseen by the author. The principal ingredient to-day in railway outlays is labour, and in a high-wage economy it is labour which needs to be economised far more than those limited resources of unmined coal which Mr. Johnston is so desperately anxious to conserve. Final judgment in any case on the advantage of railway electrification will have to wait on experience, and this, with current restrictions upon capital investment and a heavily overloaded electric-generating plant, may be long in coming.

It would no doubt have been a great advantage to have had the railways electrified before the war, when times (as we now see them) were so propitious, but that they were not is as much the fault of national policy as a failure of the railway managements. None of the amalgamated companies by themselves were, it is true, prepared to undertake so ambitious a venture. But can Mr. Johnston really imagine, in those days of national economy campaigns, that any nationalised undertaking would have had the courage or the audacity to do so? It would no doubt also be an advantage if the railways could be electrified forthwith. But it is certainly not true to say that electrification would cost little while housing costs so much (pp. 43–4). Resources consumed in electrifying railways cannot be used to build houses; and, in an argument which the author chooses to base on considerations other than economic, it is not always easy to see which is the better use for our necessarily limited resources. Would Mr. Johnston, for example, allow us to appeal to the consumer?

With qualifications, many economists might accept marginal cost as a convenient rule of rate making and some, no doubt, will accept Mr. Johnston's further proposition that railway overheads could with advantage be undertaken by the State. But right at the outset, in the first two chapters, the point is made that a loss to the railway administration consequent upon the offer of very cheap transportation is adequately offset in the national accounts by the advantages accruing to those who enjoy the new and extended facilities for carriage. Mr. Johnston wants rates and charges to be fixed by economists. He would, I imagine, be disappointed in the advice he might receive. Few economists to-day would claim, as one of its principal advantages, that nationalisation (p. 321) makes possible an extensive operation of services, necessary for "sociological" reasons but commercially unprofitable—the services needed, for example, to improve public health; to secure better distribution of population throughout the countryside; or to bring within reach "the wonderful sunshine belt of the Morayshire coast" (p. 237). Mr. Johnston describes his work as a "sociological" study of the transport problem, principally, it appears, because he refuses to be confined by questions of cost. His abiding passion is passenger transport by rail. Great Britain, he claims, is "practically" unique among the railways of the world in that passenger traffic is run for a net profit (p. 228). Such indeed is Mr. Johnston's enthusiasm for movement that his Utopia appears at one point (p. 243) to be a country in which fares are reduced to a fraction of a penny per passenger mile and everybody, in a state of perpetual motion, spends all their time travelling by train in order to provide the traffic necessary to justify the low rates.

Mr. Johnston has written a one-sided and long-winded book; but one which is often interesting and will make an amusing addition to the railway addict's shelves. His pages are filled with quotations from a rich variety of sources reaching back to Mr. Gladstone's Act of 1844. The serious student will find very little about the British Railways to-day, and nothing at all about the country's economic recovery; but the seeker after the curiosities of railway literature will be rewarded once he has overcome the deficiencies of the index and accustomed himself to the vagaries of the author's arrangement.

GILBERT WALKER

University of Birmingham.

Incentives and Management in British Industry. By R. P. LYNTON. (London : Routledge and Kegan Paul, 1949. Pp. viii + 212. 15*s.*)

MR. LYNTON detonates (p. 3) at the spectacle of " the frenzied search for new incentives. . . . Factories are painted and canteens installed, sports grounds acquired and training schemes begun ; in the same cause workers have periodically to glower across a table at Management, and foremen are taught to smile . . . one result is clear, that the term incentives has acquired so many meanings that it has become meaningless." In this pleasant vein Mr. Lynton has most successfully co-ordinated the observations of government reports, private inquiries, articles and letters to the Press. Many readers will be grateful to him for putting them on the track of these sources of information and some of their gist. But this method of presenting the situation carries the danger that the authorities quoted may, and in this case do, vary considerably in credibility and in the legitimate scope of their observation. When reading this work it is essential therefore to keep an eye on the references—a process made none too easy by putting them all at the back of the book chapter by chapter without giving the number of the chapter at the head of the page in the text. The width of Mr. Lynton's reading, undoubtedly, is valuable in a field where, as the author fully realises, true research falls so far short of the possibilities. The author has thereby enriched his thesis and put it on a broad base.

Briefly, Mr. Lynton's thesis is that the question of industrial incentives is bound up with total man, the total situation in a factory, and in particular with the general scope and practices of its management. The worker is not just a mechanism who reacts only to incentives, but a member of a group with certain attitudes held over a long period of history. As factories have become larger these groups no longer identify themselves with the whole business unit, and special organisation is now needed to reintegrate workers into the running of the firm. The large factory has a hierarchical structure, and integration is necessary at several levels of authority. Joint consultation should occur at shop level before the petty grievances of the shop floor are allowed to obstruct and exacerbate the discussion of general principles in the supreme Works Council. By the same token, the individual factories and firms should be allowed greater scope and not be tied down by uniform hours, wage rates and conditions imposed on them by Factory Acts or collective agreements for the whole industry. Factory morale has suffered by the compulsory imposition during the war of personnel officers and (p. 166) "a particular form of joint consultative machinery." Such uniformity is, in the author's view, restricting severely the scope for good management. To quote the last sentence of the book : "Finding and applying the best incentives in their factory and workshops is, and will therefore remain, the responsibility of each individual management."

One reader at least was left with the impression that this ending had led him full circle to the beginning of the book : the "search (though perhaps less frenzied) for new incentives " (a meaningless term). But undoubtedly in the course of the trip he received some valuable impressions.

Mr. Lynton gets his problem into historical perspective (Luddite, however, is (p. 8) the word, not Tolpuddle). He makes good use of the latest authorities in the social sciences, though reliance on the hot gospellers among them has perhaps led the author to push economic incentives too far into the background. He rightly stresses the importance of getting back to a position where the amounts of earnings are connected with the amounts and values of work done in any particular industry, but, following the lead of industrial psychologists, he is weak in visualising the nation's whole economy. The deterrent effect of unemployment may, as he says (p. 68), still far outweigh its effects as an incentive ; but there can certainly be a state of over-full employment in which no incentive is offered to the mobility required by changes in the international position of the country as a whole. In short, though Mr. Lynton is right to stress psychological factors to the great mass of employers, still ignorant as the " result of a general preoccupation with technical issues " (p. 6), his argument is somewhat lopsided for the general reader. More attention to economists and relatively less to psychologists is called for at this time of national crisis. The citizen reader, without an industrial background to put him wise, will fail to appreciate from this book that the piece-wage, based on a proper time-and-motion study, though a rarity, is a most powerful stimulus to productivity ; and that a differentiation in wage-rates, even to the point of being thought unfair, is still the handiest motive power for the redeployment of labour that is so urgent to-day.

P. SARGANT FLORENCE

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Industrial Peace in our Time. By HUBERT SOMERVELL. (London: Allen & Unwin, 1950. Pp. ix + 224. 15*s.*)

THE title of this book gives little idea of its contents. It deals only incidentally with the preservation of industrial peace. Its main concern is with establishing a new industrial order in which adequate incentive will exist to secure more abundant production. The author sees the root of the problem in the present system under which the owner of capital employs both management and labour for a wage, reckons them as a cost of production and is entitled to all the profits from the sale of the finished product.

The solution here suggested is not State ownership of industry, but rather a system under which the centre of control would pass from the functionless capitalist owner—who, it is gathered, would, however, still supply the capital—to the managers and workers. Frequent reference is made to signs of revolt on the part of management against their present obligations to the owners of capital, but the author does not indicate who, under his scheme, would be charged with the appointment and removal of management. It may be that he merely favours the tendency, which is already evident in some of our largest companies, towards the functional board of directors, but one feels that his advocacy of the shifting of control is rather a slogan than a plan.

The real purpose of the book is to advocate a new system of remuneration to be known as Federal Share Production remuneration. Even here the author emphasises that he has worked out no hard-and-fast scheme and that institutions must grow from experience. In the main, however, he favours the methods of remuneration and the relationships which have been established in the organisation of the Nunn-Bush Shoe Company in the U.S.A. His fundamental point is that labour and management should be regarded as partners in industry, that this is impossible so long as they are treated as costs of production and that their natural reward is, and should be recognised to be, not wages but a share in the added value contained in the finished product. While the actual distribution would vary from industry to industry and even from product to product, he cites, as an example of what might be contemplated, 84% to labour, 12% to management and 4% to capital. He makes no reference to a not dissimilar scheme which, apart from the assignment of a separate share to management, operated in the coal-mining industry in Britain from 1921 to 1944. It certainly failed to produce the results which he predicts for his scheme of Federal Share Production.

No doubt, however, the author would maintain that, if the new spirit in industry is to be achieved, his scheme must be taken as a whole. It involves, for example, to mention only a few points, that workers would be guaranteed employment in the enterprise between the ages of, say, twenty-five and fifty-five or sixty; that they would be subject to retirement at sixty-five and compulsorily retired at seventy with State pensions supplemented from contributions paid by employing companies; that dismissals should be only by agreement between Work Share Unions (the new name under the scheme for trade unions) and management or, failing agreement, by arbitration; and that alterations in the selling price of the finished product should be subject to agreement by the union.

Unemployment, the author contemplates, would be limited under the Share Production system because workers would automatically receive and readily accept lower money wages as trade recedes. The effects of such unemployment as emerged would be mitigated by short-time working and the supplementation of earnings from State unemployment-insurance funds. Legal direction and economic sanctions to secure mobility of labour are both rejected. Instead, there would be a system of organised self-direction. This would be done by Work Share Unions in over-manned industries encouraging workers to move to under-manned industries. Regional affiliations of Share Unions could, the author contemplates, do this much more efficiently than the present system of Labour Exchanges; central affiliations of Share Unions would deal with central problems of location and distribution of industry.

It should perhaps be mentioned that the proposals include also a radical reconstruction of the trade-union movement. The Work Share Union would be primarily a local organisation integrated into the company structure, and the focal point of union power would be in this local organisation. Central union organisation would still exist but " would act in an advisory and co-ordinating capacity, concerned mainly with the larger problems of the industry."

A new approach such as this to the problems of industrial relations is refreshing and stimulating. In the going the author draws attention to many of the difficulties which are at the root of conflict in industry. Some of his suggestions in isolation and applied to suitable units in industry might well be the subject of further experiment. Of his scheme as a whole and applied to industry in general it is perhaps sufficient to quote a phrase of the author's (used by him it is true in quite a different connection) that "it is beyond the power of imagination to predict what the outcome might be." The outcome is unlikely to be tested.

H. S. KIRKALDY

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The Building of Satellite Towns. By C. B. PURDOM. (London: J. M. Dent & Sons Ltd. Pp. 532 + xx. 42*s.*)

THIS is a large, expensive book, inevitably so, since it contains maps, plans and photographs which are really needed to illustrate the text, and in particular the growth of the two Garden Cities at Letchworth and Welwyn. Mr. Purdom, as Sir Theodore Chambers writes in a Foreword, has the advantage of having taken an active part in the initial phases of both cities; indeed he was for some time finance director at Welwyn. No doubt both cities owe their origin mainly to Ebenezer Howard, who has been called "A dreamer who saw his dreams come true," for his book—*Garden Cities of To-morrow*—first made the idea popular. It is probable that the Town and Country Planning Act, with its development charges, has closed the door to private enterprise, so New Towns will be promoted only by the Minister at the taxpayer's expense.

Both Letchworth and Welwyn involved their ordinary shareholders in serious financial sacrifices, at least in the earlier years; but the promoters were not actuated by the profit motive. At Letchworth they had to wait ten years for the first payment of 1%, and another nine years before they received their maximum dividend of 5%; but the debenture and preference interest was always paid. In 1946 the Board paid off all the arrears of ordinary dividend, and now it appears that the property of the ordinary shareholders is worth a great deal more than the share capital of £250,000.

At Welwyn the story is less cheerful; there have been two reconstructions, the second wrote down the ordinary shares from 20*s.* to 2*s.*, and turned the debentures into ordinary shares of the same nominal amount. Then came the enormous rise in the money value of houses, and quotations jumped to "50*s.* to 55*s.*" Mr. Silkin resolved to turn Welwyn into one of his New Towns, so the shareholders had to be bought out on a fair valuation of their property. Even so the original shareholders do not get back much more than a quarter of their money; the debenture-holders, who thought themselves badly treated in the second reconstruction, have actually gained from it.

Perhaps the chief merit of this book is its history of the two Cities, and the lessons which may be learnt from two of the most interesting philanthropic social experiments in Europe. Mr. Silkin's New Towns are based on the experience acquired in Hertfordshire; the taxpayer may feel annoyed at the difference in cost between privately and publicly organised Garden Cities. Mr. Silkin appears to have spent a pound where the two Boards would have spent half a crown.

A town plan, Mr. Purdom insists, is not final; it is " a living, changing thing;—when it appears to be finished, it has to be started all over again." Another of his points is that a " garden city " is not the same as a garden suburb, although the two things are often confused, especially in France, where the " *Cité Jardin* " is nothing but a suburb laid out on " garden city lines," as the planners of housing estates call them. A Satellite Town, too, must be legally independent of the parent city; it must have its own local government, and its own " social, commercial, industrial and residential centres." Le Corbusier's ideals, although suggestive, will not do, and his sixty-storied sky-scrapers are a monstrosity. In this country Wythenshawe and Speke are mere suburbs of Manchester and Liverpool.

Mr. Purdom reviews the reports of various Committees and Royal Commissions, concluding they meant well but failed to have much effect, although they adopted the " garden city idea." In particular, the Barlow report (1939) urged the decentralisation and dispersal of population and industry; but it was informing rather than constructive. Then came the Uthwatt report on Compensation and Betterment, with its absurd proposal to fix the price of land at the values of March 31, 1939. What would the T.U.C. say to wages fixed at 1939 rates? Sir Leslie Scott's report on Land Utilisation in Rural Areas was " a first-class survey of rural planning," with a " useful discussion of green belts."

Mr. Purdom looks on Satellites as a necessary precaution against a third world war, and he wants far more than the proposed twenty (perhaps 200) of them, and they should be distributed throughout this island. Unsuitable sites may be chosen, indeed the choice of sites is one of the main difficulties; so much is needed, a railway, roads (but not a trunk road), drainage, water and gas supply, electricity and so on. Town-planners differ about the density of houses per acre; Mr. Purdom supports a "more compact" arrangement than the Reith Committee's 2,500 acres for a population of 30,000, observing that Letchworth and Welwyn, designed for 35,000, have built-up areas of 1,876 and 1,601 acres respectively; but each "City" has an agricultural belt as an essential part of the plan. An old town or village does not make a good site for a new town of 30,000 or 40,000 inhabitants, since the existing lay-out is certain to be unsuitable, and a new lay-out means the destruction of many good houses.

J. E. ALLEN

Cambridge.

Urban Land Economics. By R. U. RATCLIFF. (New York and London: McGraw-Hill, 1949. Pp. xii + 533. 47*s*.)

THIS is a book which one receives with high expectations, for three reasons. First, the subject, although full of interesting economic problems, is neglected, relatively to agricultural economics, in a degree which is one of the most outstanding examples of the "institutional time lag" in the history of economic thought. Secondly, the book is of a monumental architecture, covering the whole field of housing, building, location of industry, town planning, and urbanisation, in addition to the narrower field of urban land economics. Thirdly, the author, who is Professor of Land Economics in the University of Wisconsin, is a well-known authority in this field who has made previous valuable contributions.

All the same, this is a very disappointing book. The structure is massive enough, but the more one looks at the details the less impressive it becomes. It is true that there is a good deal of common sense in the book, and some discussions, such as the limitations of a "filtering down" policy in housing, contain much original thought. But the reader feels smothered under a flood of institutional and other detail, and the ponderous mass of data presented is made to appear even more ponderous by the cumbersome style employed. One cannot help feeling that sometimes the book borders on the obscure and the platitudinous. Thus it seems hardly necessary to include sentences such as these, "Restaurants and lunchrooms vary widely in the quality of the food and service offered and in the price level of their menus" (p. 131), or again "In some cases, of course, provision must be made for shopping districts to serve the householders in the neighborhood" (p. 168) or again "To the extent that market activities fail to yield balanced and satisfactory results, the market may be said to be instable and imperfect" (p. 281).

Perhaps the most charitable assumption which can be made is that the book, according to the publisher's notice, is intended as a foundation work "which is fundamental but not elementary." The job of combining an elementary introduction into the subject for undergraduate students with the institutional data and basic analysis is almost super-human, and it appears that Professor Ratcliff's method of squaring the circle has been to shove into the book anything which might be of interest to anyone at those three different levels.

As it is, there are a number of tantalising general propositions on important economic points for which one would want proof. For instance, it is stated (p. 48) that "the decline of wholesaling activities and the increase in direct buying from the manufacturer have resulted in the diminishing of an important urban function." What is the evidence for this? Is it really true that wholesaling has become less important? Or again on the next page we read that: "The lower labor costs in the smaller communities reflect not only lower wage rates but also greater productive efficiency." Again, what is the evidence for this? Is it true that productive efficiency in smaller communities is higher? The book is dotted with statements of this sort on which one longs to know the author's evidence. Especially important but also specially doubtful is the author's assumption that rents are more sensitive than other real-estate prices. This seems to contradict previously available evidence, certainly that derived from British data, and one would like to know what evidence there exists. It would certainly make a great deal of difference to the theory of urban land value.

To the British reader, the book will be valuable for its factual information on American institutions. It is entirely written from American experience for American readers. It throws comparatively little light on the problems circumscribed by the Barlow, Scott and Uthwatt reports or on the mysteries of "floating value." It is, however, interesting to note that Professor Ratcliff states that "it was customary in sub-dividing to anticipate utilisation by some thirty years" (p. 307) and to find him quote an instance where it would have required 1,627 years at the normal rate of urban growth to absorb the unused lots prepared for building. This strongly suggests that "floating value" must have been very strongly developed in the United States through much of its economic history.

In connection with the problems raised by the Town and Country Planning Act of 1947, one takes note with interest of the argument that income from urban land is not unearned, since land is not a unique factor of production but should be treated like labour and capital, and hence that rent is a measure of contribution not of extraction or of reduction. To the present reviewer, however, this argument seems beside the point. It is certainly true that land is inextricably mixed up with capital improvements, and it is also true that the only reason why rent is obtained on land is that it is a source of satisfaction; yet it remains true that the particular owners of particular pieces of land have done very little to place themselves in a position to satisfy the particular sorts of satisfactions flowing from the use of their particular piece of land. In that personal sense, if not in a functional sense, income from urban land rents may legitimately be called "unearned," and the principles embodied in the Town and Country Planning Act may be defended.

The book is entirely based on American literature. The only passing reference to British conditions seems to be a recommendation of the practice to include estimates of quantities with the invitation for bids on local-government contracts. This practice is apparently little known in the United States. The British reader will, however, be filled with envy in noting from the book the wealth of information available from the United States housing census on matters entirely left aside by the British census, such as rents paid, equipment of houses, mortgage conditions and the like. On the other hand, one notes that in spite of the United States superiority in statistics the forecasting of housing needs seems to be just as hazardous and ill-founded an undertaking as it is in Britain.

It will also be of interest to the non-American reader to find the author describe such attitudes as "absence of sentimental ties," "social heterogeneity" and "taste standardization" as typical of United States urban—as distinct from rural—civilisation. Outside the United States, one is too apt to consider such qualities as typical of American conditions in general.

H. W. SINGER

Lake Success,
New York.

The Market for College Graduates. By SEYMOUR E. HARRIS. (Harvard University Press (London: Geoffrey Cumberlege), 1949. Pp. 206. 32*s*.)

THERE are now about 2·5 million students enrolled in "institutions of higher learning" in America; if enrolment is held at this figure there will be about 10·6 million graduates twenty years from now. But the President's Commission on Higher

Education has recommended that enrolment be raised to 4·6 millions, which would produce about 14·5 million graduates twenty years hence. It can also be calculated that "in fifty years one-third of the adult population would be college graduates while one-half would have had at least a junior college education." With this in mind the author has made an elaborate analysis of the posts now filled by graduates, and is able to show that, even if enrolment is not increased, graduates must soon be content with posts carrying less salary and less social prestige than those held by their predecessors.

The author's object is to establish the facts and to drive home the conclusions so far as careers are concerned; would-be students and their parents should, he holds, be fully aware of these prospects. He has no doubt that the nation can bear the expense even of the larger programme, and, in general, he thinks it right that the country should take out part of its gains in higher education. He has concentrated his attention on the problem of careers, though he does say that the programme "would result in a serious deterioration of standards unless the institutions of higher learning provide suitable curricula for others than those with 'verbal aptitudes.'" He also makes it clear that his thoughts run in the direction of "a greater concentration of junior colleges and possibly the ultimate elimination of the four-year colleges . . . which may well be converted into either two-year colleges or universities."

Because higher education has been extended much further in America than elsewhere, Americans are faced by a situation without precedent. But it is by no means too early to look into our own case. On the one hand we estimate the number of doctors, chemists, engineers and so on which the country needs and attempt to adjust the number of students accordingly. On the other hand, what Professor Harris says of America is also true of this country: "equalisation of opportunities and the removal of economic, regional, racial and other barriers to higher education is an objective towards which the country moves." In pursuit of this objective it is widely held in this country that it should be made possible for all who can reach a certain examination standard to enter a university if they want to do so. We may, therefore, presently find ourselves launched on a course which will reproduce the American situation.

The point most worth discussion is whether, supposing that graduates are willing to moderate their expectations as regards careers, a great expansion of universities is to be commended.

It is not the case, it is well to bear in mind, that the choice is between multiplying universities and a system under which a small privileged group alone has facilities for full-time education after school-leaving age; for there are ways of providing further education otherwise than in the university manner. This point is relevant, because there is reason to believe that universities cannot be multiplied at will. They can hardly be manufactured; they must grow, and growth needs time and favourable soil. It may also well be that there is a narrower limit to university expansion than is generally supposed. For universities are places devoted to a particular mode of life—to the preservation and extension of learning—and in order to participate effectively in the life of a university more than intellectual ability is needed: These special aptitudes, like other special aptitudes equally important in their way, may not be very widespread. Experience seems to show that university expansion has gone too fast if not too far in America; indeed, the President's Commission found it difficult to define and therefore to recognise a university. We still retain the traditional idea of what a university should be, however serious our shortcomings.

In anticipation of the demand for a steady expansion of our universities which will certainly be made if the financial situation permits, it would be well to conduct an examination of our problem. As Professor Harris hints, the solution is not to be found merely in the moderation by graduates of their ambitions in the matter of careers; it may rather lie in the separate provision for professional and technological training, and for whole-time research, coupled with new forms of further education for those who, for one reason or another, do not possess the aptitudes appropriate for the university way of life. In any case we need to be aware of the possibility that we may drift into a position where our universities will be gradually modified out of recognition as the result of a thoughtless expansion in the supposed interests of a full democracy.

A. M. Carr-Saunders

London School of Economics.

The Cost and Financing of Social Security. By Lewis Meriam, Karl T. Schlotterbeck and Mildred Maroney. (Washington, D.C.: Brooking Institution, 1950. Pp. 193. $3.)

This is an excellent short survey of the present position of social security in the United States and of the important changes proposed. Its primary purpose is to analyse the finances of the proposed extensions and to examine the financial validity of the basic assumption of social insurance having regard to the sharp rise in estimated future expenditure. Two sets of proposals are considered: those contained in Bill H.R.2893, which represent the views of Mr. Truman's Administration, and those in H.R.6000, a more modest measure which received the approval of the House of Representatives in October 1949. Some idea of the difference between the two Bills can be gained from their estimated total costs. H.R.2893 is estimated to cost between $4,655 and $7,163 million in 1960 as against the $3,800 million of H.R.6000 and the $1,800 million of the existing schemes. The authors of the survey are obviously sound in taking the higher figure as the basis of their analysis. For clearly it is only a matter of time before the United States accepts the idea of a comprehensive system of social security, and the costs of such a system are likely to be higher there than in this country.

After surveying the present schemes and the proposed changes the report brings together the various estimates of future costs. These can be summarised as follows:

Estimates in billions of dollars.

	Low-Cost.		High-Cost.	
	1960.	2000.	1960.	2000.
All insurance benefits under H.R. 2893 (except for temporary disability)[1]	4·65	13·24	7·16	20·60
Temporary disability	1·45	1·87	2·18	2·81
Health service	6·60	7·40	15·50	17·30
Unemployment	2·95	3·74	4·43	5·64
	15·65	26·25	29·27	46·35
Public assistance	0·90	0·50	1·50	0·60
Veterans benefits	5·00	6·00	5·00	8·00
	21·55	32·75	35·77	54·95

[1] Mainly old age and widow's pensions.

The difference between the low and high cost estimate include an allowance for what some observers regard as an inevitable expansion in the provisions—this is particularly noticeable in the estimated cost of a free health service.

Having gathered together these totals the authors then consider two problems which are better treated separately but are sometimes confused. The first concerns the validity of assumption that a State insurance scheme has the same financial basis and integrity as has a private insurance scheme. The theory of the private scheme is simple. The likely claims under the various risks are determined actuarially and rates of premium are fixed to cover estimated claims and administrative costs. But in the case of old pensions and certain other types of claim the premium income must accumulate for a number of years, possibly thirty to forty years for old-age pensions, before payments come to be made. The private insurance company invests the premiums thus accumulated, and assuming that after a time no new entrants came into the scheme the investments would gradually be sold as the pensions mature. In other words the company really manages the investment of the savings of a large number of individuals who are thereby also enabled to share certain risks. But the finances of State schemes are seldom of this kind. For one thing usually each extension of an old-age pension scheme allows pension rights to new entrants out of all relation to the contributions they are likely to make. The difference is made up by a direct payment from general taxation not in the form of a lump sum, but annually or as the pensions fall to be paid. Moreover, the money which does accumulate is not necessarily used to increase the productive wealth of the community but may be borrowed by the Government for general or even destructive purposes. In other words, the idea that millions of contributors are building up a source of income out of which their pensions can be paid in twenty or thirty years hence may be a dangerous delusion so far as State schemes are concerned. Payment may well depend on the willingness or ability of future citizens to pay high taxes.

This brings us to the second question, which is not without interest to private insurance companies in so far as their own reserves are nowadays partly in Government securities. Will the total resources of the community be large enough in 1960 or in 2000 to spare large payments to that section of the community which for one reason or another has ceased to make a contribution to the national income? The answer to such a question involves estimates of the trend of productivity and population, as well as of other likely claims on Government and personal income. The report does not get far in making such estimates, but is generally content to strike a note of caution. Though the statistics all refer to the United States, there is much in the general discussion which is appropriate to this country.

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Pricing of Military Procurements. By JOHN PERRY MILLER. (New Haven: Yale University Press (London: Geoffrey Cumberlege), 1949. Pp. xvi + 292. 32*s*.)

PROFESSOR MILLER'S book is a critical study of the purchasing policies of the American Armed Services during the Second World War. Although this was a private piece of research, the author was able to draw on his own experience in the Navy Department and has examined a wide range of Government material, both published and unpublished, to which full documentary reference is given. The war-time experience is used as a guide in the formulation of a body of useful recommendations concerning future policy in peace and war, and the value of the book is enhanced by the inclusion of the report of a conference on its subject, in which twenty-four interested persons from the Armed Services, industry and Yale University all participated. The account of the ways in which contractors were relieved of special war-time risks, such as the possibility of premature redundancy of additional equipment, seems rather sketchy, but otherwise the study is admirably thorough. It is a valuable contribution to a subject which has for some time been growing steadily more important, and is likely to go on doing so as the share of Governments in the volume of purchases increases.

Nothing emerges more clearly from any study of war-time contract policy than that there is no simple or single solution of the problems of Government purchase. For this reason it is essential for efficiency that wide discretion as to the method of purchase should be left to those immediately responsible. It is highly desirable that their activities should be subject to retrospective criticism from outside, but their hands should not be elaborately tied in advance. In this respect the American services have been less favourably placed than their British counterparts, and Professor Miller's plea for greater flexibility is undoubtedly right.

He applies it specifically in a suggestion that in no circumstances should there be an obligation to place contracts by competitive bidding, though that method might be adopted where it appeared convenient. But the plea for flexibility might well have been carried further. For instance, the cost-plus-percentage-of-cost type of contract was prohibited by statute from before the American entry into the War. No one would advocate the widespread use of this type of contract, the weakness of which is obvious and notorious. But there are occasional circumstances in which it is the fairest practicable type. Where the amount and difficulty of the work to be performed are highly unpredictable it may sometimes well lead to a lower price than the cost-plus-fixed-fee contract, in which the fixed fee is apt to be proportioned to an exaggerated estimate of costs. The latter type, however, was the usual American expedient in a variety of circumstances, and was, indeed, used to an extent that probably few would recommend: about 30% of the value of all United States war contracts was on the basis of cost plus fixed fee.

For the future, there are suggestions that much more use might be made of some form of incentive contract under which the contractor would receive a fixed fee and a share of any savings he achieved below a target cost. It is doubtful whether there can ever be much scope for the satisfactory use of such contracts, which have had near-counterparts in the United Kingdom in both World Wars. If sufficient information about costs is available for a reasonable target to be set, then the same information is usually good enough to provide a basis for a firm price, without risk of profiteering, which is the most desirable contractual arrangement.

If more overt recognition is given to the relation between costs and the rate of profit, then it becomes specially important that some objective but not rigid criterion for estimating the latter should be an integral part of contractual policy. On this topic Professor Miller has little to say. The figures of rates of profit which he gives are all related to the value of sales and, though they show a steady decline in the course of the War, it is doubtful how far this was sufficient to offset the partly fortuitous gains which must have resulted from increased turnover. It seems possible that the British practice of trying to relate the rate of profit to the value of capital employed on the contract is a more satisfactory method, despite the difficulties in evaluating capital employed, which caused the United States Services to abandon their plans to make some use of it.

Perhaps the most interesting suggestion is that, as far as possible, instead of each item being priced separately, a company's whole output for Government use should be priced on an overall basis. Some experiments on these lines were tried in the United States of America towards the end of the War, but were not sufficiently extended to be conclusive. Such a scheme would greatly reduce certain knotty problems, such as the allocation of overheads among different items of production, and has great administrative advantages to commend it. That is a major point. The positive contribution which any form of contract can make' to the encouragement of productive efficiency is limited, but a system of purchase and cost investigation which involves great elaboration can be a serious drag on management. This is a problem that is not confined to military purchase or to the United States of America, and anything which offers a hope of simplifying it without creating new disadvantages is worth serious consideration.

W. ASHWORTH

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Development of Aircraft Engines and Aviation Fuels. By ROBRET SCHLAIFER and S. D. HERON (Two studies of Relations between Government and Industry). (Boston, Mass., Harvard School of Business Administration, 1950. Pp. xviii+754. $5·75.)

THE names of the aircraft types bearing the main burden of the war in the air, both British and American, are familiar to everyone. Not so familiar are the names of the huge and powerful engines that enabled these aircraft to hurtle into the dog-fight or to penetrate deep into enemy territory. Yet the story of the development of these engines from the 200-h.p. midgets of 1918 to the 2,000-h.p. giants of 1944 is as fascinating as any in the history of technology and science. The drama was heightened by the urgency of the arms race with Germany, and after the outbreak of war, Allied engineers poured a vast human effort into the development of the successful engines—the Merlin, the Hercules, the Wright Cyclone, and the Pratt & Whitney Twin Wasp.

It must be confessed that little of the drama of this backroom battle is allowed to penetrate into the pages of Professor Schlaifer's detailed and impartial examination of engine development from 1920 onwards. The weight of detail in his technical sections inevitably obscures the main argument about the relations of government and industry, and the book would appeal to a wider public if the technical sections were condensed. On the other hand, British readers will find much that is new to them in the author's transatlantic viewpoint. It must often have been difficult during the inter-war years for the American Army to inspire in their aero-engine industry the feeling that engines for the military were at least as important as engines for commercial use. Professor Schlaifer shows how in the relative progress of air-cooled and liquid-cooled types, commercial considerations were allowed to overcome those of military importance. In the early 1930s all the important American aero-engine manufacturers concentrated on the development of the air-cooled radial engine because it offered obvious and immediate advantages for commercial flight. The Army were almost alone in pointing out the potential advantages of liquid-cooled engines. This situation also found the weak spots in the procurement organisation of the Army. Insufficient funds, spread over a large number of projects, administered under restrictive contractual regulations by professional soldiers with short terms of service in the technical branches and little previous knowledge of the more intimate questions of development. The American Army did what they could to encourage the firms with smaller resources to continue liquid-cooled engine development. Only one venture—the Allison V.1710, in which the firm bore a large part of the financial burden—was brought to successful production. It was never a serious rival to the Rolls-Royce Merlin in service, and its development was slower. Where air-cooled engines were concerned, however, the incentive of profit, out of which development costs could be recovered, was sufficient in the thirties to stimulate the large firms to develop engines almost entirely at their own expense. Here the development period was shorter, and the final product was if anything superior to British air-cooled engines.

The fact that the Army depended on financial resources outside their control for the development of their engines is so sharply in contrast to British practice that it is impossible not to ask which system provided better aero engines and at what relative cost. This is the underlying problem of Professor Schlaifer's study. In an attempt to answer these questions he traces not only the story of the American engines, but also that of the Rolls-Royce Merlin family. A shorter section deals with Bristol air-cooled engines. The writer also briefly describes the organisation in the British Air Ministry for obtaining new engines. Four aero-engine firms, designated " family " firms, were charged with the entire development of engines for the R.A.F. Attempts to enter the field were vigorously discouraged. But while the Air Ministry paid for all development, leaving little true " risk " for the firms, the technical independence of the firms was sedulously fostered. Nothing so rigidly binding as the technical oversight of the development of the American Continental 0–1430 engine was ever imposed on a British firm. The other feature of the British system was the policy of the Air Ministry throughout the lean years of disarmament to reserve the largest portion of financial appropriations for research and development. The immediate result was tiny production units, but drawing-offices and experimental shops humming with activity. The continuity in office of the civilian technicians in charge of development in the Air Ministry, as well as the flexible financial control over contracts, impress the American observer as highly favourable to development.

The author concludes that on the whole neither system resulted in a marked technical superiority nor in reducing costs. But he attributes the failure of Napier and Armstrong Siddeley to maintain their engine development at a satisfactory level mainly to the British system of removing all risk from the conduct of aero-engine production. On the other hand, he finds the speed of development and concentration of resources of Rolls-Royce and Bristol the equivalent of the best amongst the independent American firms.

Professor Schlaifer's book is a mine of information for those interested in the technical history of aero engines. He has been able to consult many people intimately concerned, though it is a pity we are not told more about his documentary sources. And not everybody will agree with his contention that written sources throw no light on " questions of policy, motives, or incentives." It is also doubtful how valid the conclusions of the particular case of aero-engine development are over a wider field. Many differences in the structure of industry and in the attitude of government departments concerned, both in this country and in the United States, would be evident if his study also included airframe development.

There is a valuable section on research and development of aircraft fuels by Mr. S. D. Heron, an expert in that field, the conclusions of which deserve to be incorporated in the main story of aero engines. This study clearly shows how important was the progress of fuel technology in the growing efficiency of the aero engine. This story, however, offers no obvious comparison or contrast to British development.

CYNTHIA POSTAN

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Wartime Economic Planning in Agriculture. A Study in the Allocation of Resources. By BELA GOLD. (Columbia University Press (London: Geoffrey Cumberlege), 1949. Pp. 594. 55*s*.)

IN this lengthy book Dr. Bela Gold is mainly concerned to demonstrate that, in spite of the great expansion of agricultural output in the United States during the war, far more might have been done by America both to alleviate the grave shortage of food after the war in so many countries and to release both farm labour and the factories making farm machinery for war production.

After two introductory Chapters in Part A he goes on in Part B to describe and criticise both the planned expansion in production and the execution of the plan. His main complaint is that too little effort was made to change the types of agricultural production; not only was the output of crops inessential in wartime maintained or increased but also, and more important, livestock output was increased more than that of crops and meat output more than that of dairy products. This was wrong, because more resources are needed to produce a given amount of nutrients in animal than in crop production, and for meat than for dairy products and eggs. This is a familiar argument to British readers; in this beleagured island the shift Dr. Gold advocates for the United States was undertaken to some extent and was clearly necessary. But I do not think Dr. Gold fully makes his case for the United States. Livestock products make a more concentrated use of shipping resources than do crops; shipping resources were often scarce (this is a topic scarcely touched on in this book); if livestock products were to be produced at all, the best place was in the areas more distant from the places of food shortage. Had wheat production been greatly expanded earlier, the full additional yield could neither have been shipped nor stored. Dr. Gold is, of course, right in criticising the running down of stocks of wheat after 1942 and the great volume of livestock production in 1944 and later when exports of wheat were certainly insufficient; but he weakens his general case by overstating it.

In addition, Dr. Gold maintains that much greater productivity could have been achieved by greater efficiency in production.

In Part C he goes on to the distribution of the food produced. Here his most important criticism is of the great expansion in domestic food consumption at the expense of exports; rationing was insufficient and was removed too soon. From the point of view of world welfare he is here clearly on strong ground. Yet he seems to underestimate the difficulties of some parts of the policy he advocates, partly by an incorrect analogy with what was done in this country. Thus he advocates differential rationing according to needs, and rationing in restaurants; but he is, of course, wrong in stating, as he does on p. 383, that " in Britain, the individual had to surrender ration points whether dining in restaurants or at home." And he toys with the idea of rationing animal feeding-stuffs; had he studied the British system more deeply it is unlikely that he would have attached much importance to such a weapon in a country such as the United States, where, to mention only one difficulty, almost all the feed is home produced.

After an interesting chapter on prices he goes on, in Part D, to survey the adequacy of mobilisation after 1944, an extension of his earlier survey which could usefully have been amalgamated with it, so cutting down the excessive length of the book. Finally, in Part E, he discusses the difficulties of planning induced by pressure from interested parties and by conflicts between Congress and Executive and between different agencies of the Executive. While there is much of general interest in the discussion, I should have found it more useful had it been less general.

In spite of many interesting points I found this book disappointing. It is too long and too full of criticism, quoted or original. And Dr. Gold, by overstating his case in a number of directions, weakens it; undoubtedly the United States might have done more to help other countries with food, but not, I think, as much more as Dr. Gold believes.

RUTH COHEN

Newnham College,
Cambridge.

Gresham on Foreign Exchange. By RAYMOND DE ROOVER. (Cambridge, Mass; Harvard University Press. (London: Geoffrey Cumberlege), 1949. Pp. xiv + 348. 48*s*.)

THE sub-title describes this work as an "Essay on Early English Mercantilism, with the text of Sir Thomas Gresham's Memorandum for the Understanding of the Exchange," and gives a more adequate idea of its scope. Professor Arthur Cole in his Foreword compares the author to "the preacher who takes for himself a text, and extends his exegesis to a well-rounded sermon."

The manuscript of the Memorandum has only now been identified as Gresham's by the researches of Professor de Roover himself. The attribution is a matter of both biographical and historical interest. The date of the Memorandum is put at 1559. But Gresham's views really form only a very subordinate part of the subject of the book. Professor de Roover gives us a most illuminating study of the problems of foreign exchange as they presented themselves from the time of the debasement of the coinage at the end of Henry VIII's reign to that of Malynes Misselden and Mun.

The substance of the work is divided into three parts, dealing respectively with English monetary policy and coinage, with the mechanism of foreign exchange and banking in the sixteenth century, and with the "foreign exchange controversy." It is especially in the two latter that the value and interest of the book reside.

The author's researches have supplied the material for a full and clear account of the problems and principles of foreign exchange as they presented themselves to the authorities and the writers of the period.

Professor Tawney and others have made economists familiar with the manner in which "dry" exchange and "fictitious" exchange provided the means of evading the usury laws. The effect was to put the borrowing trader at the mercy of the banker who was in a position to deal in exchange on a foreign centre. The London merchants found themselves dependent on a ring of foreign bankers, who of course exacted a spread between rates of exchange wide enough to afford them a commission as well as interest.

Gresham in his memorandum distinguished between "natural exchange" and "merchants' exchange," the latter being any exchange operation yielding more than the metallic equivalent of the money paid. He went on to specify twenty-four "feates," which merchants devise by exchange for their own gain, and offered fourteen suggestions of his own of "the way to raise the exchange for England" and thereby to put a stop to the gains foreign bankers were making at the expense of the British merchants.

Among the suggestions was one to which he repeatedly recurred at times when exchange policy came under review; "turning a mass of the Queen's treasure upon the exchange by her highness' factor, and making England the lord of the exchange here."

The Memorandum was undoubtedly brought to the attention of the Royal Commission of 1564, and the proposal for creating a fund for dealing in exchange was referred to in the Commission's report. But to create the fund £10,000 would have been needed, and the Queen had not that sum to spare (p. 227).

R. G. HAWTREY

London.

Economic History of the United States. By CHESTER WHITNEY WRIGHT. Second edition (New York and London: McGraw-Hill, 1949. Pp. xxi + 941. 36*s.*)

THE last generation has seen the appearance of a whole series of economic histories of the United States, designed for the most part as text-books for undergraduates and catering clearly for a wide demand from college teachers. The most outstanding of these have been written by historians for the instruction of history students. In 1941, however, there appeared a further essay in this *genre*, this time by a professor of economics, forming one of a series on business and economic problems and catering primarily for the needs of students of economics and business administration. This book, by Professor Chester W. Wright of Chicago, has now been issued in a second edition which brings the story down to the end of the Second World War. More ambitious than its predecessors, it is both more comprehensive in scope and more radical in its object, and on both grounds deserves the most respectful treatment.

First, its scope. The most exhaustive and learned single-volume account hitherto attempted, the new edition runs to over nine hundred closely packed pages. Even this represents a considerable reduction on the first edition, and one of the objects of the re-issue has been clearly to make it more manageable. Although an improvement, it cannot be said that the revision has entirely eliminated the earlier fault. American text-book writing has for some time suffered increasingly from a form of elephantiasis, the result, not of professorial megalomania, but of the inherent tradition of American college teaching. It is almost as if the professor, despairing of ever teaching his pupil to think and read for himself, has had to fall back instead on presenting him, in an encapsulated form, with the results of a generation of intensive, specialist research on every conceivable aspect of the subject of study. With this in hand the student is told to commit to memory pp. *x* to *y* for examination by an instructor whose distrust of speculation and reverence for the atomised fact inhibits the possibility of synthetic thought. Such a system begets text-books which are admirable as works of reference but which approximate more and more closely to that *reductio ad absurdum*, the newly published *Encyclopædia of World History*. It would be a grave injustice to Professor Wright to identify his book with the above caricature; yet the demands of the system have had their effect in reducing the whole to a dead level of competent and condensed, but flat, writing which is not likely to inspire the English novice, however much he may value its orderly array of fact, statistics and graphs.

Yet there may be a second and more fundamental reason for this flatness of treatment, a reason relating to the author's basic premise. Unlike many of its kind, this text-book is not devoid of thesis. Although the facts are left to speak for themselves, they are built into a very definite framework of theory. The author is writing as an economist, and his object is the practical one of explaining to economists and business men how the American economy grew in order to teach them to

> "act more intelligently in promoting changes in the economic order . . . to enable us to supply our wants more efficiently and thus raise our standard of living."

It is interesting to note throughout an extensive introduction along these lines how much the author's assumptions are those of the chamber-of-commerce audience for which he is writing. Thus economic history is concerned with a rising standard of living: there is no place in Professor Wright's scheme for the economic history of a falling standard of living! Thus, also, the inevitable overtones of *laissez-faire* :

> "Yet we can still fairly assume that the individual guided by the desire for economic gain and seeking to learn from history how he can best direct his activities in his chosen pursuit for this purpose will usually at the same time promote the economic progress of society."

This is no place to enter into a discussion about the philosophy of history; but an historian cannot fail to see a danger signal in such assumptions about the practical purpose of history. One's guard is up, and one cannot help probing critically any historical writing based on such a premise. This premise does, in fact, lead to much writing that is non-historical. The author's outlook is so bound by present time and place that he cannot help projecting current attitudes backwards to periods in which they are not necessarily relevant. Trained to handle economic problems statically he is not deft at indicating change, at working in that dynamic dimension which is the historian's peculiar province. Trained to marshal his conclusions in statistical form he is at a loss when statistics are not available; then, instead of using the historian's art of significant illustration, he takes refuge in a cautious, and often trite, general statement. Used to general theory about how Economic Man behaves he has no eye for the men and women who compose his story: the individual settler, or iron founder, or Philadelphia merchant who can bring to life the most colourless generalisation. In short, convinced as he is that history is a science, he lacks the art which makes the pages of a Tawney or a Clapham come alive and which is surely still essential to an economic historian, however statistical and technical his theme. Without it he is not an economic historian, only an historical economist.

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Dollar Crisis : Causes and Cure. By T. BALOGH. (Oxford : Basil Blackwell. 1949. Pp. xlvi + 270. 15*s*.)

A REVIEW of a tract for the times which appears a year later than the book has not only disadvantages but also advantages. The disadvantages are obvious. The problems with which the author is wrestling are those of a year ago. Events of many kinds have changed the nature and the relative urgency of the problems. Some have found a solution; some are further than ever from a solution. The gains are less obvious, but none the less real. The reviewer can more readily separate the purely ephemeral from the more permanent and see more clearly what is the author's contribution to the more lasting *corpus* of economic thought.

Mr. Balogh's book, when it appeared, was designed primarily for immediate consumption. Indeed, when he was overtaken by devaluation, the book was held up in order that a preface of some forty pages dealing with the new problems should be added. I am, nevertheless, going to pass by very much that he has written about these immediate issues. On all of them Mr. Balogh is immensely controversial. On very much of it I disagree with him. I regard many of the charges that he levels at other economists and at Civil Servants as quite incapable of justification. He is infuriatingly self-assured : Balogh is always right, and the whole world is always wrong. Indeed, had we persistently tried to do everything wrong, we could hardly have hoped to have succeeded in such unfailing, hundred per cent. wrongness. All this I propose to disregard, because I believe that in certain very significant respects Mr. Balogh is saying things which are immensely true, immensely important and greatly in danger of being overlooked. And in the last analysis these are the things upon which the whole book turns and afford the criteria by which all policies and actions are judged.

A full-employment policy, Mr. Balogh holds, must be the fixed centre of all economic policy. It is not only good sense economically. It is the one firm barrier against communism. If the purpose both of American foreign policy and of British foreign policy is to limit and contain the spread of communism, it can only hope to succeed if democracy is consistent with a high and stable level of employment and a rising standard of life, both in Britain and in the world at large. Full-employment is, however, inherently inflationary. A system of free wage-bargaining, with no implied restraints and no wages policy, requires in our present conditions 10% or more of unemployment to prevent inflation. One has therefore to choose between an inflationary high level of employment and a politically disastrous and inhumane control of inflation by unemployment.

Faced by that choice, Mr. Balogh believes that all reasonable and humane men would and should choose the high level of employment and face up to the problems of preventing inflation, as in war-time, by direct controls of one kind or another. To his thinking the "bonfire of controls" was a surrender of the principle of high-employment, a selling-out by misguided economists and Civil Servants and misled ministers of what should be a cardinal tenet of socialism, or indeed of any humanitarian economics.

To his thinking, again, this surrender sprang from confusion of thought about the essentials both of internal and external policy. Internally, a high level of activity, with high investment and powerful incentives to invest, is the one certain source of increasing income per head. Externally, the restoration of competitive power by the route of deflation is pure lunacy: while relatively greater deflation than other countries are imposing on themselves will give a temporary relative advantage, competitive deflation contributes nothing to a final and permanent solution, and, once this disastrous policy has been started, any country left behind in the deflationary race is at a powerful disadvantage and finds its reserves being dissipated.

Thus Mr. Balogh's constructive policies, if I understand them properly, would begin with a clear recognition by Democratic thought in the United States, by Labour thought in Britain and by most of the countries included in O.E.E.C. that a central feature of economic policy should be the maintenance of a high level of employment, the maintenance of controls to that end, and the solution of the dollar shortage by methods which would ensure a sufficient flow of dollars to the outside world to get a dollar balance without extra-American deflation.

Thus far—possibly because I may have inadvertently diluted the pure spirit of Mr. Balogh's doctrine to suit more delicate palates—I believe that a large number of responsible economists in Europe would find some measure of sympathy with his objectives. It is when he comes to detail that I find it very much more difficult to be certain that I have successfully derived from Mr. Balogh's discursive tirades against particular things a coherent picture of what he really intends; or to be certain that many economists, who are broadly sympathetic with his ends, would be equally sympathetic with his means.

First as regards controls. Mr. Balogh's philosophy is I think as follows. During a period of rapid and great structural change there are bound to be particular shortages and bottlenecks. There are two ways in which an economy can be adjusted to these bottlenecks. Either, the whole scale of activity and consumption can be reduced by general measures of deflation to the level determined by the bottlenecks. Or alternatively, there may be physical control and rationing of the bottleneck products, localising and confining the trouble and making particular shortages consistent with a generally high level of activity outside this particular sphere. Between these two any sane man would choose a limited control rather than a general deflation. But where have relative prices got to? They hardly ever appear in Mr. Balogh's discussion. Are all demands so inelastic that the rationing of slightly scarce products cannot be left to prices without quite disastrous re-distributions of real income? Cannot the minor problems of limiting consumption of bottleneck products be better dealt with in this way? Are a few limited price rises, with other limited price reductions, inconsistent with a general policy of stabilisation and avoidance of inflation?

Apart from this, Mr. Balogh wishes to use the control of materials as an instrument for controlling industries, rationing materials not in accordance with pre-war use but to enforce particular policies of specialisation, export, expansion or contraction. The bonfire of controls has forfeited that possibility. But has he really thought out the use of controls in this way in a world in which the materials are no longer acutely scarce? The inefficiencies of 1946 and 1947 sprang largely from raw-material shortages; small batches, interrupted production runs, the use of unsuitable material, all made their contributions to low output per head. Mercifully we have now put much of that behind us, because material supplies have got more nearly into balance with needs. Must we return to it artificially? If the limiting factor is general manpower resources rather than particular material resources, can one hope, say, to use a system of steel licensing to control the engineering industries? Must one forbid inter-firm dealings in steel? Must one attempt to tie up sub-contract steel with end-uses? If one does not, can one make steel artificially scarce, despite general plenty, for particular end-uses?

It would, I believe, have been much better if Mr. Balogh had argued more clearly and systematically what he believes to be the central key-points of planning and control if high employment is to be maintained, so that one could relate particular methods of control to a general view of the essentials. I am not myself convinced that the analogies of war-time are wholly valid. The need for particular physical controls in a war-time economy springs partly from the powerful pressures of full employment. They spring partly (and I would say principally), from a dramatic change in the relative demands upon different industries and raw-material supplies. There is no obvious reason why a peace-time economy, running continuously at a high level, should not progressively eliminate the major bottlenecks, so that the limiting factor is increasingly the limit of general resources rather than of particular resources. I believe we are slowly moving in that direction and that a bonfire of some particular controls was perfectly consistent with a high-employment policy, provided that budgetary control over the total of consumption (which Mr. Balogh almost wholly overlooks) and a minimum of other essential controls over import, investment and consumption of certain remaining bottleneck products were maintained.

But it is not clear that Mr. Balogh would regard a general control over consumption as equivalent to a series of particular controls, even if the shortages which had required the particular controls had vanished. Mr. Balogh, as I see it, is anxious to secure a high measure of effective socialist control and of redistribution of real income in the short term in a world in which the main social and economic structure and the pattern of money-income cannot be, or at least are not, correspondingly changed. He does not assume that his socialism works through the market, with income- and price-changes as the ingredients. He is anxious to use controls over particular forms of expenditure as an instrument of re-distribution of real income and to prevent dissaving by the owners of accumulated wealth. In all this Mr. Balogh is poles asunder from the various academic socialists who seek to devise a market socialism.

Supposing, however, that one concedes all Mr. Balogh's objectives, there remains, even in a completely socialist society, a problem of the total level of demand, and some danger that, if it is exceeded, the balance between the home market and the export market will be disturbed. In smiting his enemies who want to rely on powerfully deflationary methods, Mr. Balogh is in danger of annihilating also his friends who believe that socialism will work best in an atmosphere that is neither deflationary nor hyper-inflationary. Let us face the fact that, what is or is not inflationary turns largely on wage and salary structures and bargains, and the practicability of limiting wage increases through a suitable policy to accord with the possible increase of consumption, and that this can only to a limited extent be affected by physical controls. Mr. Balogh points out that in the last few years productivity has risen more rapidly than wages. But that proves nothing unless the increased resources are becoming available for consumption; they have in fact been largely absorbed by the closing of the overseas deficit and by increased government expenditure. In the next few years there is, however, a prospect of fairly rapid advance of real consumption if rapidly rising total production can be allied to stabilised investment and government expenditure. But Mr. Balogh would like to see considerable increase of investment; if government expenditure increases also, a non-inflationary high level of employment may be difficult or impossible to maintain with all the physical controls in the world. The war-time wages policy, with the concomitant stabilisation and subsidisation of prices, was an absolutely essential ingredient of the war-time anti-inflation policy. Can a similar regime of self-abnegation be sustained in peace-time? I do not myself feel convinced that Mr. Balogh has shown us an effective means by which non-inflation can be fully reconciled with a high level of employment. That is not to say that the right answer is to throw away all the controls which can contribute to limiting inflation and to depend solely on general deflationary weapons. If controls can make the system work with 4% of unemployment and only moderate inflation, and if in their absence 10% is required to prevent inflation, then controls may be very well worth accepting. In making us face this issue, and in reminding us of the functions in a peace-time economy of some of these controls, Mr. Balogh has done something very important.

Finally, the problems of dollar scarcity. Mr. Balogh is extremely pessimistic about either direct exports to the United States or opportunities of acquiring dollars by third-country trade. It is not easy to be certain one has followed his argument, and one feels a certain sympathy for Professor Haberler's inquiry whether English economists have forgotten that trade is governed by comparative and not absolute cost. I take it that Mr. Balogh's pessimism springs not from that, but partly from a strong feeling that lobbies and vested interests will prevent tariff reductions or secure their re-imposition if large exports begin to affect American producers, partly from a realisation of the difficulties likely to arise from the steeper gradient of American progress. He looks for a solution principally to massive and internationally organised investment in the undeveloped countries of the world in which the United States government would play the chief, but not the exclusive part. To deal with short-term cyclical dollar shortages he would reorganise the International Monetary Fund into an effective International Central Bank and provide a more adequate supply of funds with which to carry out its functions.

It is never difficult to invent methods by which the United States might redress the world shortage of dollars. It is much more difficult to be sure that the methods one has invented are at all likely to commend themselves to American opinion and to be of a scale necessary to meet the situation. Some volume of investment in undeveloped countries is very clearly one of the methods which might be welcome to enlightened American thinking. It is much more difficult to convince oneself that such action would be on the desirable scale. A sensible division of labour between the United States and the rest of the world would probably involve American exports of goods and services close to the present 6½% of the United States gross national product. A balance based on present American importing habits and trends would require a reduction to about 4¼%. If the world is to enjoy the division of labour that would go with a high-level balance and the United States is to escape the consequent structural adjustments by receiving no more than the imports of the low-level balance, the volume of lending required is of the order of $4 billion a year. I cannot conceive that the undeveloped countries of the world are in a position to digest continuous investment at that rate or to divert resources to perform the very large element of local construction involved. Apart from all else the political problems of control and ownership are far from easy to settle. This may be one important ingredient in a solution. I cannot believe that it can be the major element.

I have deliberately touched on only a few of the many problems that this book raises. It will be obvious to any reader that it has irritated me and that my judgment of it is probably untrustworthy. I can only say that few other readers can hope to find their own pet opinions treated without caricature and misrepresentation, and that they, as I, will at intervals probably throw the book down in fury. But, as with nasty medicine, they will certainly be better in the end. And if I have been driven to make faces at the doctor, he will probably be consoled by thinking that he has done me good. One thing he has certainly done. He has made me face the unpalatable fact that simultaneous lip-service to full-employment, absence of inflation and the virtues of a free economy may be a cowardly form of self-deception.

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NOTES AND MEMORANDA

THE SHARE OF WAGES IN THE TRADE CYCLE

MOST of the recent discussions concerning the movement of real wages and the share of wages during the course of the trade cycle have been based on the static equilibrium analysis of the firm. Thus more or less successful attempts have been made to derive a theory of such movements from static stability conditions, *e.g.*, that under perfect competition marginal productivity of the variable factor must be diminishing. Again, plausible theories have been put forward on the basis of changes in the elasticity of demand during the course of the cycle.[1] It is not the purpose of this paper to deny that these theories have been useful or important. But they all suffer from the defect that they apply a static method of analysis to what, after all, is a dynamic problem. (Curiously enough, the older Marshallian analysis in terms of lagged money wages has recently fallen into disfavour just when the importance of lags is being more and more appreciated.) An attempt will be made in this paper to develop a theory of the share of wages in the trade cycle which is directly derived from the trade-cycle theory itself, and thus makes use of the dynamic element in the situation.

The trade-cycle theory which will form the basis of the discussion will be that developed by Mr. Hicks in his recent book.[2]

I

The share of wages, given the price of all imputs, is determined by two main factors: (*a*) the ratio in which labour is combined with other factors (we shall assume that there is only one other factor: capital) and (*b*) the price charged for the output. In this section we shall examine the first of these determining factors.

Consider the Hicksian demand equation for income

$$D_t = cS_{t-1} + v(S_{t-1} - S_{t-2}) + H(1 + g)^t \quad . \quad . \quad (1)$$

where D_t is demand in period t, S is supply, $H(1 + g)^t$ is the autonomous investment function, c and v are the propensity to consume and the accelerator respectively. Equation (1) is in terms of supply of the previous period, since income in any one period is equal to supply in that period. Let us now also make the assumption that $D_t = S_{t-1}$, then

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[1] R. Harrod, *The Trade Cycle.*

[2] J. R. Hicks, *A Contribution to the Theory of the Trade Cycle.*

$$S_t = cS_{t-2} + v(S_{t-2} - S_{t-3}) + H(1 + g)^{t-1} \quad . \quad . \quad (2)$$

Equation (2) gives us supply in period t as a function of the supply of period $t - 2$ and $t - 3$. We shall now assume that we are on an upswing so that (2) is explosive.

Now, supply does not only depend on the demand of previous periods but also on the imput of factors in the previous period. If capital intensity of production remains constant then maximum output in any one period t is directly proportional to the stock of capital available in period $t - 1$.

We may thus write

$$S'_t = \alpha K_{t-1} \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (3)$$

(where K = stock of capital).

But the amount of capital K_t available in period t is equal to what was available in period $t - 1$ plus the additions made to it in period t.

We thus have

$$K_t = K_{t-1} + v(S_{t-2} - S_{t-3}) + H(1 + g)^{t-1} \quad . \quad (4)$$

Let $K_{t-1} = \beta S_{t-1}$

Substituting (4) in (3) we have

$$S'_t = \alpha[\beta S_{t-2} + v(S_{t-3} - S_{t-4}) + H(1 + g)^{t-2}] \quad . \quad (5)$$

Equation (5) gives us the maximum that can be supplied in period t without excess capacity.

It is clear from equations (2) and (5) that S'_t will only equal S_t through time if at least some of the coefficients are variable. For (2) is explosive, therefore (5) must be explosive, but since (5) is lagged by one period more than (2) the solutions of the two equations cannot be the same.[1] Now the most obvious variable coefficient is α, which measures the inverse of the capital intensity of production. If α is the only variable coefficient it will have to increase through time. This implies that the capital intensity of production must diminish during the upswing.

This result is intuitively clear. Given that there is no excess capacity and that supply lags behind demand by one period,

[1] Equations (2) and (5) are of the "hump" type, and will therefore oscillate. There is, however, no reason why we should not assume the hump to be distributed (not shown in the equations) and therefore the oscillations to be damped. This is in fact done in the text. If this assumption cannot be made, α will also oscillate during the upswing.

any increase in demand must initially be met by employing more of the readily variable factor: labour. Since demand is continuously expanding the producers will always have to temporise by using more of the variable relatively to the (for the given period) fixed factor.

If the prices of labour and capital remain constant the continuous decline in capital intensity during the upswing will increase the share of wages. No doubt eventually the prices of both imputs will tend to rise, and since on the whole, increases in wages will also be reflected in higher prices of capital goods, it is reasonable to assume that the price of the latter will rise relatively to the price of labour. That will tend to slow down the increase in or reduce the share of wages. But this factor will only come into operation at a later stage in the expansion.

During the downswing the accelerator is dropped out of the equation. But to analyse this situation we do not require the equations at all. For, by definition, excess capacity means that the ratio of money going to capital to that going to labour will increase. Hence, during the downswing we should expect the share of wages to diminish. Once again, as the slump continues along the Hicksian L line (*a*) wages will tend to fall and (*b*) excess capacity will tend to diminish. This will tend to raise the share of wages. But these factors only become operative in the later stages of the contraction.

II

We shall now consider the second of the two factors operating on the share of wages.

Using equations (1) and (2) we may define the decumulation or accumulation of stocks Δ_t as

$$\begin{aligned}\Delta_t &= D_t - S_t \\ &= c(S_{t-1} - S_{t-2}) + v(S_{t-1} - S_{t-2}) - v(S_{t-2} - S_{t-3}) \\ &\qquad + H(1+g)^{t-1}[(1+g) - 1] \quad . \quad . \quad . \quad . \qquad (6)\end{aligned}$$

But $(S_{t-1} - S_{t-2}) = (D_{t-2} - D_{t-3})$ which in an expansion is exactly equal to the decumulation of stocks in period $t - 2$. We thus have

$$\Delta_t = c\Delta_{t-2} + v(\Delta_{t-2} - \Delta_{t-3}) + H(1+g)^{t-1}[(1+g) - 1] \qquad (7)$$

Now equation (7) is of exactly the same type as equation (2). Hence if (2) is explosive (7) is explosive. But (7) will explode at a faster rate than (2), for $[(1+g) - 1] > 1$. Hence the ratio of Δ_t to S_t will increase through time. This implies that the revenue from stocks will increase relatively to the total output. Hence the share of wages in gross income will decline very rapidly during the expansion. But this is not all. It is inconceivable that firms have either sufficient stocks in the depression or are willing to loose them at an increasing rate to satisfy equation (7). Sooner or later *whatever the shape of the cost or demand function* prices will rise. It is, of course, difficult to incorporate price changes into the equations. But one thing is fairly clear: if the price rise is to reduce the drain of stocks, *i.e.*, to slow down the rate of expansion, prices will have to rise relatively to money wages. For it is from wages that a large part of the demand is derived. There can thus be little doubt that real wages will fall during the expansion. This fall is both ensured by the rise in prices and by the old and well-established fact that wages lag behind prices.

We may now bring the two strands of the argument together. Let us suppose that the rise in the share of wages due to the fall in capital intensity exceeded the fall in the share of wages due to the rise in prices. Then clearly the propensity to consume would be increased. In the following periods excess demand would be greater than ever! The drain of stocks would increase. To safeguard the diminishing stocks, prices will rise even further. In fact, will have to rise sufficiently to prevent the drain of stocks. Thus sooner or later the share of wages must diminish during the upswing.

In the contraction the argument is not so clear. But here we need not rely on price changes to such a great extent. For the accumulation of stocks now constitutes part of net income. It follows at once from equations (7) and (2) (without the accelerator) that the share of profits in output must diminish. We may also expect some fall in prices.

Eventually the excess capacity which tends to reduce the share of wages will disappear, and only the stock factor will be operative. At that stage it follows unambiguously that the share of wages must increase.

It should be noted that the foregoing analysis is, of course, still a simplification. No two cycles are exactly alike, and many variables may change in the long run. But we believe that our theory does provide a basis for further study.

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ON THE DANGERS OF READING STATISTICS

THERE has been a remarkable increase in the general use of statistics since before the war. Business men have grown accustomed to demand quantitative support for their decisions, and politicians have found that policies can usefully be embroidered with suitable facts. The supply of statisticians is responding to this in the conventional way. Salaries have risen, appointment boards are recommending study of the subject and undergraduates are hastening to acquire the necessary academic qualifications, probably unaware of the grave dangers involved in acquiring statistical techniques.

The clue to the dangers, the clue which should never be overlooked, is that the statisticians' employer, whether commercial or political, requires data presented in the way most favourable to a particular viewpoint. It is true that during his training, the statistician learns a usefully wide range of ways of presenting material. After initially being unable to select the most favourable technique, and blundering along collecting useless correlation coefficients or finding that the wrong differences are significant, he learns to foresee at an early stage whether any technique will yield the right answer, an acquisition known as "statistical flair." The fully trained graduate can produce within a morning a statistical memorandum supporting or destroying any proposition, helping employer or trade union, compatible with "Western" or "Eastern" propaganda. As a very elementary example, he will readily show that less coal is produced or exported than in 1938, *ergo* nationalisation is bad; or alternatively that there has been an upward trend in coal-mining productivity since vesting day, *ergo* nationalisation is good.[1]

But the very process of acquiring this dexterity may impair its utility. In the first place, there is in academic tuition some archaic discouragement of the practice of searching for the most favourable arrangement of data. The pupil may be taught that evidence hostile to one's purpose must be accepted and even painfully assimilated.[2] And the methodological emphasis will be on distinguishing professional technique from personal judgment. This hiatus is, of course, entirely antipathetic to the skilful interchange of facts and assumptions, the fruitful interweaving of technique and interpretation, which constitute the practical statistician's *métier*.

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[1] The next step is that *ergo* the Government should be opposed or supported at the General Election.

[2] A promising line of rejection of unacceptable information is, however, provided by Mr. Justice Streatfeild's recent dictum: "Facts speak louder than statistics."

But in itself this is not a formidable danger. Such sterile formalism can be, and is, discarded as soon as the requirements of a career become evident. Far more harmful is the academic insistence on a distinction between association and causation, particularly between correlation and causation. The analysis of social and economic affairs, where direct effects of single causes are rarely visible, demands a mind receptive to causal inferences drawn from association. To support a political party or a "school" of economic theorists involves continuous search for examples of association which imply the correct causal relation, generally examples of the operation of some single cause which is held to be at the root of all problems (*e,g.*, meat-eating, controls, imperialism, under-consumption, infantile repression, soil erosion, Communism, etc., etc.).[1] Statistical purism insists that measures of association, such as the extremely useful correlation coefficient [2] be treated as if they were in themselves no evidence of direct causation. Nor does the discipline of the subject stop at agnosticism as regards customary explanations in terms of single causes. The technique of multiple correlation positively encourages a search for more than one causal factor, which leads directly to a multi-dimensional outlook, probably to theoretical eclecticism. This scepticism deprives arguments in social studies of their simplicity, and hence of their force, and it leads to cautious, qualified argument, well condemned as "academic."

Here is a flaw not so easily rectified by practice, for what is taught is essentially a pattern of thinking, which can easily become habitual and undermine the brisk self-confident dogmatism essential to personal progress. Worse than that, it encourages a heretical attitude towards accepted ideas which appear to the statistician to be based on over-facile interpretation of evidence, or on an inadequate search for further causal factors. Financial success will not be immediately and tacitly ascribed to virtue, nor political success necessarily to wisdom. Economic crises will not readily be ascribed to incorrect policy, nor prosperity treated as evidence of administrative ability. Even the actual construction of The Palace of the Soviets would not be thought indisputable proof of the superiority of the Soviet system; nor will the piles of crutches left at Lourdes be treated as conclusive evidence of objective healing powers. On all sides those trained as statisticians are brought up against the sacrosanct opinions of the day. Such education, so far from being a help in the contemporary struggle for survival, is obviously a handicap in a world where success comes to those who choose their master correctly and serve him loyally. In most countries the statistician's mental habits are *in sensu stricto* fatal.

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[1] A statistician might even boggle at deducing the political nature of an organisation from a pamphlet found in a waste paper basket, a formula for success in the Upper House.

[2] Useful because first in *all* practical cases some positive or negative correlation coefficient will be obtained, and secondly most uninformed opposition can be silenced by a show of coefficients.

Such is the subtle menace of questioning the foundation of argument on association. But if an inflexible attitude to interpretation is dangerous, how much more of a liability is the questioning of evidence itself. The statistician is taught to search for comparability of categories and for exactness of definition, whereas much more sweeping intellectual success can be obtained by identifying "wage-earner" and "trade unionist," "shareholder" and "entrepeneur," "civil servant" and "bureaucrat," "manager" and "capitalist."

He is also led to ask for considerable and unbiased evidence, which is so rarely available in practice that his facility of argument will be seriously checked.

Most people are happy enough to draw conclusions on national or social characteristics from a sample of a few dozen, perhaps even from a sample of one. The wages of a docker, the profits of a monopolist, the beer-drinking of a pauper, if they happen to be known to oneself, can form the basis of substantial social theories. Indeed, the habit of ready generalisation is universally accepted. Nobody will call in question a judgment of a restaurant from one meal, an individual from one sentence or even gesture, a commodity from one item. To deny the right to such fluent mental classification would be to limit gravely for many people the range of subjects on which conversation or writing is possible. Sampling theory is in this way a grave handicap in personal life, but it is a drawback even in the practical application of sampling itself. The theoretical statistician may consider public-opinion polls virtually useless if the number questioned, the number of refusals and the methods of selection are not stated, and he may similarly throw grave doubt on market-research technique.[1] Even if he is satisfied on these scores, he may insist on the *possibility* that an observed difference, which would be useful and corroborative evidence, may be due to chance. Thus statistical training tends to disqualify the student from practising in two of the main fields of statistical inquiry and even from using results produced in these fields. Lastly, there is the timid emphasis on examining the purity of the source of information. The common practice is to base opinion of a nation, or nowadays a political system, on reported gestures of friendship or acts of atrocity, irrespective of the source of these reports, or the motives of those who give publicity to them. To find difficulty in such circumstances is not merely to lose the power of selection for the sake of argument : it means an extravagant waste of useful material, and it is tantamount in disturbed times to self-imposed isolation.

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[1] Naturally those who take polls have a far greater interest in minimising cost (by limiting sample size and simplifying selection) than in the abstruse merits, financially imponderable, of minimising standard errors.

Statistical discipline is thus a dangerous anachronism. Support or opposition to the opinions of others, even academic theorising, comes much more easily if this type of training is avoided. The induced attitudes are superficially attractive enough to become firmly implanted in the mental habits of many who study the subject. One may argue that a statistician's job cannot be held without training as a statistician. But that is quite untrue. All the important " statistical " jobs, affecting commercial and political policy, involve merely problems of collection, tabulation and simple interpretation of data. These processes can technically be performed by anyone with reasonable mental powers, some feeling for quantities and an arithmetical training.

At the most one requires to know such things as the practical advantages (in bringing out desired characteristics) of logarithmic as against natural scale diagrams, the circumstances in which a median will be higher than a mean, which type of seasonal index is the most sensitive, how different elementary curve types behave in extrapolation, and how to construct index numbers which are to move in a required way. It may be argued that more advanced techniques permit an impressive decoration of statistical reports, but even this is at the cost of simplicity and thus force of presentation. A rather more substantial reason for reading the subject is that generally the trained statistician can give a more realistic impersonation of the disinterested seeker for knowledge than the untrained. But this objectivity is a trick that can be acquired without burdening oneself with the rest of the academic apparatus; and to hold the sensitive balance between objectivity and innuendo is beyond the powers of the normal undergraduate. Better, on the whole, to write reports at the usual level of factual corroboration and unsophisticated " objectivity " than to risk losing the simple clarity essential to a successful career. For these reasons many undergraduates are ill-advised, whether or not they desire statistical appointments, to read statistics.

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THE DE-STABILISING EFFECT OF INTERNATIONAL COMMODITY AGREEMENTS ON THE PRICES OF PRIMARY PRODUCTS [1]

THE stated objectives of the International Wheat Agreement signed in Washington on March 23, 1949, and renewed this year, are "to assure supplies of wheat to importing countries and markets for wheat to exporting countries at equitable and stable prices." [2] These objectives are to be secured by an agreement between the major importing and exporting countries fixing a maximum quantity of wheat which the importing countries may be required to buy (in respective quantities corresponding to their "guaranteed purchases") from the exporting countries at an agreed minimum price and which the exporting countries may be required to sell (in respective quantities corresponding to their "guaranteed sales") to the importing countries at an agreed maximum price.

In view of the importance of wheat as an internationally traded primary product, and of the possible extension of this type of agreement to other primary products, it is of some importance to realise that, in the absence of other national or international intervention, an agreement which fixes maximum and minimum prices for a part only of the total volume of a commodity traded is likely to give rise to more violent fluctuations of prices than would otherwise occur. Consequently, the advantages of guaranteed maximum buying prices or minimum selling prices on that part of the transactions covered by the agreement will to a greater or lesser extent be offset by higher buying prices or lower selling prices on those transactions which fall outside the agreement.

The reason for this is that the fixed maximum and minimum prices partially shield the consuming countries, to an extent depending on the quantity of the commodity stipulated in the agreement, from the effects of a higher price in choking off demand, or of a lower price in stimulating demand. At a price above the maximum, the consuming countries in effect receive a subsidy on their guaranteed purchases; their real income is therefore greater than it would be if they had to pay the market price for the whole of the quantity bought, and this will tend to induce them to demand a greater quantity at any price above the agreed maximum than they would if that price applied to the whole of the quantity purchased. Similarly, at a price below the minimum, the consuming countries in effect are paying a tax on their guaranteed purchases; their real income will accordingly be less than it would be if they could obtain the whole of their supplies at the market price, and this will tend to reduce their demand for the commodity at any price below the agreed minimum to less than it would be if the same price applied to all transactions. In more technical terms, the effect of guaranteed maximum and minimum prices for a portion of the transactions is to eliminate part of the income-effect of a change in price and therefore to make demand less elastic, at prices outside the maximum–minimum range, than it would otherwise be. The extent of this effect will be greater the greater the income-elasticity of demand of the consuming countries, the greater the share of expenditure on this commodity in their total expenditure and the greater the proportion of international trade in the commodity covered by the agreement.[1]

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[1] This problem was suggested to the writer by Mr. J. O. N. Perkins, of St. Catherine's College, Cambridge.

[2] *International Wheat Agreement* (London: His Majesty's Stationery Office. Cmd. 7819, 1949), Part I, Article I.

The effect of the agreement on the demand for the commodity is represented diagrammatically in Fig. 1. *DD* represents the demand curve as it would be in the absence of an agreement. *OA* represents the guaranteed purchases (sales) under the agreement, OP_1 the guaranteed minimum price and OP_2 the guaranteed maximum price; *ON* and *OM* are the *total* amounts that would be demanded at these two prices. *D'D'* represents the demand curve when the agreement is in operation: it coincides with *DD* between the prices OP_1 and OP_2 (when the guaranteed prices would be inoperative), but lies outside *DD* at prices above OP_2

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[1] It is assumed that an agreement of this type cannot apply to the whole trade in a commodity; it could do so only if it were coupled with some sort of buffer-stock scheme.

It should be noted also that the argument assumes a positive income-elasticity of demand. If the income-elasticity of demand were negative, the commodity being an inferior good, the demand curve would become more elastic outside the maximum–minimum price range, and an agreement of this kind would have the effect of increasing the stability of prices. However, primary products are unlikely to be " inferior " goods over short periods, though the income-elasticity of demand for them may be negligibly low.

and inside *DD* at prices below OP_1, for the reasons already discussed.

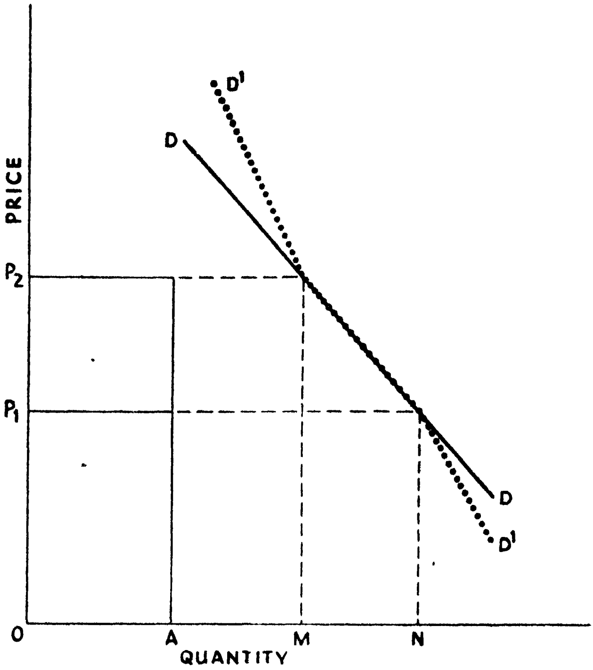

FIG. 1.

From the diagram, it is obvious that if the total amount supplied falls short of *OM* (the quantity at which price would rise to the maximum set by the agreement for the guaranteed sales), the price at which the quantity not covered by the agreement will be sold will be higher than the price which would have cleared the total supply if there had been no agreement. Similarly, if the total amount supplied exceeds *ON* (the quantity at which price would fall to the minimum set by the agreement for the guaranteed purchases), the price at which the quantity not covered by the agreement will be sold will be lower than it would be in the absence of an agreement. Consequently, unless quantity variations remain within the limits *OM*–*ON* and price variations within the limits OP_1–OP_2, in which case the agreement will have no effect on the market anyway, the effect of the agreement will be to increase fluctuations in prices.

This argument, however, deals only with the demand side of the situation; it may be that the agreement will have opposite effects on the supply side which will tend to offset the effects of less elastic demand in increasing fluctuations in prices. This would be the case if the effects of the guaranteed prices in reducing suppliers' incomes when the market price exceeds the agreed maximum and increasing them when the market price falls below the agreed minimum led suppliers to increase supplies in the one case and reduce them in the other, beyond what they would otherwise be, by consuming less or more of the commodity themselves. But such effects are unlikely to be great enough to offset the effects on the demand side since primary producers do not, in general, spend a very large proportion of their incomes on their own output.[1]

In general, therefore, it would seem that an agreement of the International Wheat Agreement type would tend to make fluctuations in price more violent than they would otherwise be. Such an increase in price instability would run counter to the purposes of the agreement in two ways. On the one hand, the higher or lower prices for purchases or sales falling outside the agreement would partially nullify the advantages of guaranteed purchases or sales to the participating countries; on the other hand, the greater violence of price fluctuations would make it more difficult to forecast and plan for future trends in production or consumption, or even to agree on " reasonable " maximum or minimum prices for future years. Consequently, an international buffer stock scheme, which would avoid these difficulties, would seem to be an altogether more promising form of international commodity agreement.[2]

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THE USE OF HOME RESOURCES TO SAVE IMPORTS: A COMMENT

1. ACCORDING to the interesting note by Professor Robinson and Mr. Marris in the ECONOMIC JOURNAL for March 1950, if the elasticity of demand for British exports were, say, 2·3, British agriculture should be encouraged to the point where the last £100

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[1] The effects of the agreement on speculative activity, including the carrying of speculative stocks by the producers themselves, are neglected throughout this discussion. It is unlikely that agreements of this kind will have any influence on speculation, except possibly by increasing the magnitude of price variations and so reducing the type of stabilisation which stabilises prices.

[2] For a discussion of buffer stock schemes, see R. F. Harrod, *Towards a Dynamic Economics* (London: Macmillan & Co., 1948), pp. 122–8, and the excellent article by Mr. R. S. Porter on " Buffer Stocks and Economic Stability " (*Oxford Economic Papers*, New Series, Vol. 2, No. 1, January 1950, pp. 95–118.)

worth of food produced (at foreign prices) cost £160 in home resources, not including farmers' profits. This would involve protection, in one form or another, equivalent to a tariff on food imports exceeding 60% and perhaps as high as 100% *ad valorem.* If, as the writers appear to suspect, the elasticity of demand for our exports is lower, the protection would have to be correspondingly greater. The authors fully recognise that some of their assumptions need further examination, and their conclusion seems to require qualification in at least one important respect : it takes no account of the effect of British protection on other countries' import policies.

2. The main basis of the writers' argument is the fact that elasticity of demand for exports is not infinite; this monopolistic position must be exploited, remembering that the marginal revenue from exports is less than their price. If the necessary restriction of trade is effected wholly by taxing imports, it is possible to construct formulæ for the "optimum" tariff on various assumptions. A very simple one will suffice for this brief note. Ignoring certain complications raised in the writers' example (higher productivity in industry than in agriculture, imports of raw materials required to make exports, the fact that the writers take a 20% rather than a very small change in exports), and neglecting, with the writers, the effects of factors other than elasticity of demand for exports (e), the appropriate tariff will be $\frac{100}{e-1}\%$ *ad valorem.*[1] Thus, with elasticity of demand for exports equal to 1½, 2 or 2½, the optimum tariff would be as high as 200%,

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[1] A uniform tariff is assumed, perfect competition or equally imperfect competition in all industries and equilibrium in the balance of payments. Let the price of imports (excluding duty) be P, and the tariff $100t\%$. The resources set free by a reduction of one unit in import-type production (worth $P(1+t)$ at home) can make additional exports of equal value. But, using the ordinary formula relating marginal revenue to price, these will earn additional foreign exchange, and thus buy additional imports, worth only $P(1+t)\left(1-\frac{1}{e}\right)$, excluding duty. If the tariff is "optimum," the quantity of extra imports must equal the quantity of import-type production foregone, *i.e.*, $(1+t)\left(1-\frac{1}{e}\right)=1$, whence $t=\frac{1}{e-1}$. (A slight extension of this argument gives easily the formula of Mr. Kahn in the *Review of Economic Studies*, Vol. XV (1), No. 37, which allows also for a less than infinite elasticity of supply of imports.) Assuming that imports of raw materials, free of duty, must be increased by a fraction i of the additional volume of exports, the optimum tariff on other types of imports would be $\frac{1}{e(1-i)-1}$. (This case raises a number of special problems that cannot be discussed here.)

100% or 66⅔%. Certain more complicated formulæ give even higher figures.

3. Now, statistical investigations have suggested a low elasticity of demand for the exports of many countries besides Britain. If, therefore, all countries were to use the type of criterion and calculation suggested by Professor Robinson and Mr. Marris in determining the protection to be given, not only to their agriculture but also to their industries (which compete with British exports), we should have a world of extremely high protection in which every country, including the United Kingdom, would almost certainly be worse off than in a world of lower trade barriers all round.[1] It can hardly be in Britain's interest to encourage such a world by her example, or to force other countries into such extreme protection.

4. A more liberal British policy may automatically reduce the barriers which it pays other countries to maintain, and—perhaps much more important—it can also be used to obtain reciprocal concessions in bilateral or multilateral agreements. In so far as British policy affects that of other countries in these ways, it will therefore pay us to give less protection, perhaps much less protection, to our agriculture (and to other forms of production) than would be suggested by calculations of the type used by Professor Robinson and Mr. Marris. If long-term elasticities of demand for exports can be shown to be greater than the magnitudes reached in recent calculations, which seem to refer to relatively short periods and on which some doubt has been cast,[2] the optimum level of protection will, of course, be still further reduced.

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OFFICIAL PAPERS

Problems of Under-developed Countries

The economic publications of the United Nations Secretariat so far have fallen under two heads : specialised studies of particular problems and general reports on the economic situation. Of these, the latter have, naturally, had a wider public, which is, however, unfortunate, since the two World Economic Reports so far produced show signs of having been somewhat hurriedly assembled, while the more specialised studies, though also produced, no doubt, in an atmosphere of something less than academic calm, are distinctly more satisfying.

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[1] Cf. Mr. Scitovsky's well-known article in the *Review of Economic Studies*, Vol. IX, No. 2.

[2] See, for example, G. H. Orcutt, "Measurement of price elasticities in international trade," *Review of Economic Statistics*, May 1950.

While the studies under review [1] differ widely in form, they both belong to the class of specialised studies. The work on relative prices arises out of difficulties on account of post-war price-relationships complained of by some under-developed countries. Its findings are exceedingly interesting, and a little surprising. The common notion of what has happened to terms of trade since 1938 is derived from the experience of the United States and the United Kingdom; it amounts to a belief that manufactures have risen in price markedly less than primary products, and would naturally lead most people to conclude that under-developed countries, exporting primary products and importing manufactures, have done rather well. This simple picture, however, must be modified in three main respects: in the first place, among manufactures, consumers' goods (especially textiles) have risen in price very much more than capital goods; secondly, price-increases among primary products differ very widely, foodstuffs and textile materials having, in general, risen more than raw materials; thirdly, many under-developed countries are fairly heavily dependent on imports of certain primary commodities (especially foodstuffs).

Since under-developed countries often depend on only a very narrow range of exports, their fortunes vary greatly. Grenada and the Gold Coast, for instance, rely mainly on cocoa, the price of which rose more than 500% between 1938 and 1947; Cuba, Martinique and Puerto Rico mainly on sugar, the price of which rose only 80% (much less than the prices of their imports). It is also the case that the year-to-year movements of some of the commodity prices have been very abrupt, a fact responsible for certain apparent anomalies in the study. The reader may well wonder how it is possible for the Gold Coast's terms of trade to have worsened in view of the phenomenal rise in cocoa prices, until he discovers that the statement to the effect (Table 19, p. 55) is based on prices of 1946, before the great rise of cocoa; the difficulty is increased by the fact that the Gold Coast data relating to diamonds, rubber and kola nuts are misprinted in the last two columns of the table on p. 152.

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[1] *Relative Prices of Exports and Imports of Under-developed Countries.* (Lake Success: United Nations. (London: H.M. Stationery Office), 1949. Pp. 156. 7*s.* 6*d.*)

Methods of Financing Economic Development in Under-developed Countries. (Lake Success: United Nations. (London: H.M. Stationery Office), 1949. Pp. 163. 9*s.*)

An interesting analysis is made also from the trade statistics of certain industrial countries. The United Kingdom's terms of trade, for instance, are shown to have worsened much more in 1947 (as compared with 1938) with a group of under-developed countries (excluding United Kingdom colonies) than with the United States or South Africa, while with Canada they had not changed, and with Australia had actually improved. The terms of trade of France and Switzerland in this period seem to have worsened also in so far as they imported primary products and exported capital goods, but the *overall* terms of trade improved in both cases, owing largely to the considerable importance of textile exports (and, for Switzerland, of watches); also (especially in the case of France) to the fact that a considerable proportion of imports consisted of manufactures.

This is a useful and workmanlike study, in which the detailed developments of recent years, such as those mentioned above, have been adequately related to both the historical trend and the general economic position of the under-developed countries.

The study of methods of financing economic development in under-developed countries is essentially a collection of memoranda on the subject by the various Specialised Agencies, the Sub-Commission on Economic Development, and the International Chamber of Commerce, with excerpts from the Report of the Economic and Employment Commission and with two introductory chapters in which some attempt is made to summarise them. The resulting summary is, necessarily, of a very general nature, while most of the memoranda represent somewhat specialised views or platitudes in various keys, which render them more interesting (presumably) to the sociologist than to the economist. The memorandum by the Food and Agriculture Organisation, on the other hand, makes a heroic attempt to quantify the problem of economic development in under-developed countries, and if this involves a considerable number of unstated or arbitrary assumptions, it has nevertheless the immense virtue of making a challenging beginning to the serious study of the matter on lines which have some chance of proving fruitful. This, at all events, renders the book a useful example of what the economist can contribute to economic statesmanship.

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AN APPROACH TO ECONOMIC DEVELOPMENT IN THE MIDDLE EAST [1]

The United Nations Economic Survey Mission for the Middle East, which was established by the United Nations Conciliation Commission for Palestine, was headed by Gordon R. Clapp, Chairman of the Board of Directors of the U.S. Tennessee Valley Authority; and Sir Desmond Morton was one of its Deputy Chairmen. The Interim Report of the Mission, which is reproduced in Part I of the Final Report, dealt with the problem of Palestine refugees and formed a basis for action by the General Assembly of the United Nations. The Final Report itself does not deal directly with the problem of the refugees, but it is pointed out that a solution of this problem is inseparable from a solution of the problem of poverty and hunger affecting a large section of the population of the Middle East. A short chapter is devoted to the present obstacles to economic development in the Middle East. Then we come to the main recommendations, which are based on a selection, from the projects included in the plans of the individual countries, of four "pilot demonstration projects"—one each in Jordan, Arab Palestine, Lebanon and Syria. These fall largely in the fields of irrigation and hydro-electric development. The hope is expressed that these "pilot projects skilfully spotlighted by the national Government, could be the beginning of the dynamic process which brings hundreds and finally thousands of small reforms and changes of benefit to peoples and their Governments." National development boards are advocated. The Mission urge that a sum not exceeding $10 million for the promotion of research activity in the Middle East be made available by the members of the United Nations (which as a body has no fund available for this purpose).

The bulk of the first volume, Part I of the *Final Report*, consists of appendices devoted to a financial survey of the Middle East, to the requirements of research and of technical survey, to some of the more important existing development projects, and to a slightly more detailed discussion of the Mission's four pilot projects.

Part II constitutes a technical supplement, based largely on the work of a number of consultants. It deals with agriculture in relation to the economic development of the Middle East; contains an engineering report on Middle-East long-term development projects; and provides details of some potential work relief projects, of a short-term nature, for Palestinian Arab refugees.

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[1] *Final Report of the United Nations Economic Survey Mission for the Middle East.* United Nations (H.M. Stationery Office, 1950. 11″. Part I, pp. viii + 103, 7*s*. 6*d*. Part II, pp. vi + 74, 6*s*.)

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CURRENT TOPICS

THE Annual Meeting of the Royal Economic Society was held at the London School of Economics on Thursday, July 6, 1950. Professor Sir Hubert Henderson was elected President of the Society. Professor D. H. Robertson, the retiring President, was elected Vice-President. Mr. R. L. Hall was elected Honorary Secretary in succession to the late Dr. L. L. Price, who had served in that capacity from the foundation of the Society. Professor A. J. Brown, Professor H. J. Habakkuk, Professor H. Hamilton, Mr. F. E. Harmer, Mr. G. D. A. MacDougall and Professor R. S. Sayers were elected to fill vacancies on the Council. After the formal business, there was a discussion, introduced by Mr. H. P. Barker and Mr. R. F. Kahn, on the question " How far is a Substantial Home Trade a necessary condition of an efficient and competitive Export Trade? " A large number of Fellows subsequently joined in the discussion.

The Secretary reported on the membership and finances of the Society as follows:

	1949	1948	1947	1939	1914
New Fellows and Library Members elected	697	674	493	490	50
Fellows lost by death, resignation, or default	434	429	397	496	33
Number of Fellows and Library Members on Dec. 31st . .	5,557	5,294	5,049	4,572	694
Total Compounders included in above total	1,987	1,979	1,953	1,155	159
Surplus of Income over Expenditure, together with receipts from Compounders . . .	£2,219	3,056	2,511	329	278

We congratulate Mr. R. F. Harrod, Joint-Editor of this JOURNAL, on receiving the honour of a Doctorate, Honoris Causa, in the Faculty of Law of the University of Poitiers.

Houblon-Norman Fund. The Trustees of the Houblon-Norman Fund, on the recommendation of the Advisory Committee, have made the following awards for 1950–51 :

Fellowships.

Miss L. M. Brown, Lecturer, Somerville College, Oxford, 1947–50.	English Commercial Relations in the 1830s.
E. T. Nevin, Assistant Lecturer, University College of Wales, Aberystwyth.	The Mechanism of Cheap Money since 1932.
W. Woodruff, Lecturer, University of Nottingham.	History of the Rubber Manufacturing Industry.

Research Grants.

G. H. Copeman, Research Student, London School of Economics.	The Direction of Joint Stock Companies.
J. S. Fforde, Christ Church, Oxford, Student of Nuffield College.	The Federal Reserve System, 1945–49.
Professor P. Ford, University College, Southampton (Additional Grant).	Small Ports in the U.K.
W. C. E. Hartley, Bank Official (renewal).	History of Banks and Bankers in Yorkshire.
J. Lanner, Lecturer, University College, Cardiff.	Banking in Post-war Germany.
W. T. Newlyn, Lecturer, University of Leeds.	Currency and Banking in the African Colonies.
L. S. Pressnell, Assistant Lecturer, University College, Exeter.	Country Banking, 1780–1845.
J. A. P. Treasure, Research Student, University of Cambridge (renewal).	British Export Trade, 1939–49.
B. Walkden, Head of the Department of Commerce, Mining and Technical College, Barnsley.	Uniform Cost Accounting in Relation to Price Control.

An offer of awards for 1951–52 will be made early in 1951. Further information may be obtained from the Secretary, Houblon-Norman Fund, c/o The Bank of England, London, E.C.2.

RECENT PERIODICALS AND NEW BOOKS

Journal of the Royal Statistical Society.

Vol. CXII, Part IV, 1949. *Variations in Working Class Family Expenditure :* J. L. Nicholson. *International Rubber Statistics :* W. G. G. Kellett. *A Few Statistics on the Length of English Words :* Sir William P. Elderton. *The Distribution of Wars in Time :* J. E. Moyal. *Wholesale Prices in 1948 :* Editor of the Statist. *Annual Report of the Council. Proceedings of the One Hundred and Fifteenth Annual General Meeting.*

Vol. CXIII, Part I, 1950. *The Use of Statistics in Business :* Sir Geoffrey Heyworth. *The U.K. Mercantile Marine and its Contribution to the Balance of Payments :* M. G. Kendall. *United Kingdom Labour Statistics :* R. B. Ainsworth. *Statistics of the Cotton Industry :* A. C. Wild. *Household Expenditure on Food in Holland :* G. Stuvel and S. F. James.

Economica.

November 1949. *A Possible Intra-European Payments Scheme :* R. F. Kahn. *A Geometrical Representation of Balance of Payments Policy :* J. E. Meade. *Investment in a Monetary Economy :* J. S. G. Wilson. *Three Notes on "Expectations in Economics":* R. Turvey, J. de V. Graaff and W. J. Baumol, G. L. S. Shackle. *Capital Exports, and Investment in Building in Britain and the U.S.A. 1856–1914 :* E. W. Cooney. *The Rubber Industry :* F. Benham. *A Note on the Interpretation of Index Numbers :* I. M. D. Little.

February 1950. *Production and Price Policy in Public Enterprise :* M. Fleming. *The Price Policy of Co-operative Societies :* B. S. Yamey. *The Decline of Ricardian Economics in England :* R. L. Meek. *The Analogy between Producer and Consumer Equilibrium Analysis :* H. Makower and W. J. Baumol. *Mr. Harrod on Hump Saving :* J. de V. Graaff. *Two Reports on Population :* E. Grebenik.

May 1950. *The Statistical Approach :* M. G. Kendall. *Distribution of Incomes in the United Kingdom in 1938 and 1947 :* E. C. Rhodes. *Revealed Preference and the Utility Function :* H S. Houthakker. *Recent German Contributions to Economics :* A. T. Peacock. *National Income, Exchange Rates and the Balance of Trade :* K. M. Savosnick. *United Kingdom Public Expenditure by Votes of Supply, 1793-1817 :* W. M. Stern. *Over-Employment :* A. C. Pigou.

The Economic History Review.

Second Series, Vol. II, No. 2, 1949. *Peasant Movements in England before 1381 :* R. H. Hilton. *London Capitalists and the Decline of Southampton in the early Tudor Period :* A. Ruddock. *Treasure and Trade Balances : the Mercantile Problem :* Charles Wilson. *The Growth of Industrial Production in Great Britain : a quantitative study :* W. Hoffmann. *The Trends in Italian Economic History in the later Middle Ages :* C. M. Cipolla. *Further Light on the Invention of the Process for Smelting Iron Ore with Coke :* W. H. Chaloner. *The History of the Newport and Caerleon Savings Bank (1830–1888) :* T. M. Hodges. *Recent French Writings in the Social and Economic History of Modern France :* P. Leuilliot.

The Political Quarterly.

Vol. XXI, No. 2, April–June 1950. *Special Number—Nationalised Industries. The General Election :* P. G. Richards. *Organisation of the Nationalised Industries :* D. N. Chester. *The Governing Board of the Public Corporation :* W. A. Robson. *Ministerial Control and Parlia-*

mentary Responsibility of Nationalised Industries : E. DAVIES. *Labour and Staff Problems under Nationalisation :* G. D. H. COLE. *The Voice of the Consumer :* J. A. G. GRIFFITH. *The Price Policy of Public Corporations :* W. A. LEWIS. *Efficiency under Nationalisation and its Measurement :* P. SARGANT FLORENCE and G. WALKER. *The Crux of Nationalisation :* SIR ARTHUR SALTER.

The Manchester School of Economic and Social Studies.

VOL. XVIII, NO. 2, MAY 1950. *The Role of Science in the British Economy :* R. L. MEIER. *The Dollar Gap :* K. MARTIN. *Consumers' Representation in the Public Sector of Industry :* A. M. DE NEUMAN. *Scottish Industries during the Inter-war Period :* C. E. V. LESER. *The Demand for Potatoes :* K. S. LOMAX.

International Affairs.

VOL. XXVI, NO. 2, APRIL 1950. *The Dollar–Sterling Problem :* ROY HARROD. *The International Trade Union Movement :* A. DEAKIN. *The Recovery of German Exports :* J. F. CAHAN. *Greece : relapse or recovery ? :* G. CHANDLER. *Food and Farming in Germany. II. Farming and Land Reform :* W. KLATT. *Tito and the Cominform :* E. CRANKSHAW. *A Polish Challenge :* G. F. HUDSON.

The British Journal of Sociology.

VOL. I, NO. 2, JUNE 1950. *Social Class of Cambridge Alumni :* HESTER JENKINS and D. CARADOG JONES. *Problems and Orientations of Research in Race Relations :* L. WIRTH. *Social Structure and the Ruling Class, II :* R. ARON. *Some Demographic Aspects of White Supremacy in South Africa :* L. KUPER. *The Trend of National Intelligence :* SIR CYRIL BURT.

The Sociological Review.

VOL. XLII, SECTION 3, 1950. *The Theory of the Social Threshold :* T. T. PATERSON.

VOL. XLII, SECTION 4, 1950. *Depopulation and Rural Social Structure :* G. D. MITCHELL.

VOL. XLII, SECTION 5, 1950. *Kierkegaard on Capitalism :* W. STARK.

The Eugenics Review.

VOL. 42, NO. 2, JULY 1950. *The Quality of the Rural Population :* BARBARA S. BOSANQUET. *Welfare and Population :* E. W. BARNES.

Bulletin of the Oxford University Institute of Statistics.

VOL. 12, NO. 3. *American Tourist Expenditure and the European Balance of Payments :* KATHLEEN M. LONGMORE. *The National Income in 1949 :* D. SEERS. *Working Class Household Expenditure in 1948 :* T. SCHULZ.

VOL. 12, NO. 4. *Food Expenditure and Nutrition in 1948 :* T. SCHULZ. *Elasticity of Demand for U.K. Imports :* F. G. THACKERAY. *Corporate Taxation and Depreciation :* P. WILES.

London and Cambridge Economic Service.

VOL. XXVIII, BULLETIN I, FEBRUARY 1950. *The Economic Position. The United States Tariff :* A. R. PREST and A. D. ROY. *The Performance and Prospects of British Agriculture :* J. R. RAEBURN. *Prospects for Interest Rates :* F. W. PAISH. *Wage Rates :* A. L. BOWLEY. *Industrial Production :* A. A. ADAMS. *Index of Industrial Production. (Table). Building and Civil Engineering :* I. BOWEN. *Home Finance :* F. W. PAISH. *International Finance :* G. S. DORRANCE. *World Commodity Survey :* C. F. CARTER. *The Second Half of 1949 in the U.S.A. :* M. W. REDER.

VOL. XXVIII, BULLETIN II, MAY 1950. *The Economic Position. British Economic Policy, 1945–50 :* E. A. G. ROBINSON. *Building and Civil Engineering in 1949 and 1950 :* I. BOWEN. *International Finance :* G. S. DORRANCE.

Yorkshire Bulletin of Economic and Social Research.

VOL. 2, NO. 1, JANUARY 1950. *Exchange Rate Adjustments :* J. C. GILBERT. *The Elasticity of Substitution between Sources of British Imports, 1921–1938 :* Z. KUBINSKI. *A Survey of Consumer Expenditure :* JOYCE BELLAMY and IAN BOWEN.

The Banker.

MAY 1950. *Inquest on the Budget. Who Holds Sterling Balances ? Towards Dollar Solvency.*

JUNE 1950. *Full Circle in Gilt-edged. Britain's Retreat from Bilateralism. American Monetary Policy :* E. V. MORGAN.

JULY 1950. *Freedom to Inflate. The Planned Neglect of Capital :* G. HUTTON. *American Monetary Policy, II :* E. V. MORGAN. *British Industry and the Schuman Plan. Ireland : an economic survey.*

The Bankers' Magazine.

MAY 1950. *Money and Banking in the Twentieth Century :* D. R. MARSH. *The Efficient Organisation of Branch Banks :* R. HINDLE.

JUNE 1950. *Five Years After. End of the War over the Ruhr :* M. J. BONN.

JULY 1950. *Money and Banking in the Twentieth Century. The Bridge House Papers :* H. BLUNDELL. *The Life of a Junior Bank Clerk 40 Years Ago.*

Barclays Bank Review.

MAY 1950. *Has Britain Paid Her Way ?*

District Bank Review.

JUNE 1950. *A Stable and Expanding World Economy :* G. D. N. WORSWICK. *The Economic Integration of Europe. The Housing Shortage and its Vicious Circles.*

Lloyds Bank Review.

APRIL 1950. *The Economics of Rent Restriction :* F. W. PAISH. *Wages in Full Employment :* S. R. DENNISON. *British Industrial Production :* E. DEVONS.

JULY 1950. *Towards the Atlantic Community :* L. ROBBINS. *The Dollar Siege :* HONOR CROOME.

Midland Bank Review.

MAY 1950. *A Survey of Monetary Affairs.*

National Provincial Bank.

MAY 1950. *The General Election of 1950 :* R. B. MCCALLUM. *Government and Industry :* H. G. HODDER.

The Three Banks Review.

MARCH 1950. *Labour Mobility, Migration Policy and the Standard of Living :* BRINLEY THOMAS. *The Approach to International Commodity Problems :* D. J. MORGAN. *The Darien Company.*

JUNE 1950. *The Problem of Sterling Convertibility :* R. F. HARROD. *The Presentation of the National Accounts :* H. A. BENSON. *Letters from a Young Lady.*

Westminster Bank Review.

MAY 1950. *The Changing Aims of Fiscal Policy :* W. M. SCAMMELL. *Margins of Safety. The Telephone Service. Mobility of Labour. The Livestock and Beef Industries.*

Planning.

VOL. XVI, NO. 312. *A New Policy for Housing Subsidies.*
VOL. XVI, NO. 313. *Sample Surveys. Part I.*
VOL. XVI, NO. 314. *Sample Surveys. Part II.*
VOL. XVI, NO. 315. *South Asia.*

Town and Country Planning.

Vol. XVIII, No. 72, April 1950. *Outline Plan for Kent :* Sir Eric MacFadyen. *Welwyn : plan for completion :* A. P. Davis. *Dispersal and Local Finance :* A. L. Wood. *The Plan for Warwick :* C. B. Parkes.

Vol. XVIII, No. 73, May 1950. *The Claim of Amenity :* C. Williams-Ellis. *School Requirements in Planning : The Tay Valley Plan :* P. W. MacFarlane. *Planning and its Critics :* F. J. Osborn. *Bucks Plan Reviewed :* B. J. Collins.

Vol. XVIII, No. 74, June 1950. *The Gold Coast begins to Plan :* C. Dumpleton. *Progress with the City Plan :* H. A. Mealand. *National Parks : (1) Snowdonia :* P. Laws. *Lancashire's Preliminary Plan ;* Sir G. Pepler.

Progress.

Spring 1950. *The Meaning of Research to American Industry :* R. Stevens. *The Importance of Business History :* Charles Wilson. *Outlook for Israel :* A. Hildesheimer. *Joseph Crosfield and Sons. The World Shortage of Fats and Oils :* J. C. A. Faure. *Vickers Armstrong :* R. Sinclair. *European Transport Progress :* A. G. Marsden.

Summer 1950. *Norway's Recovery :* P. M. Strande. *Benelux 1950 :* P. Kuin. *The Story of Pears :* E. Ellison. *Distribution Survey :* M. Abrams. *Africa's Tomorrow :* Elspeth Huxley. *A Perspective of Taxation :* F. Bower. *The Administrative Staff College :* N. F. Hall.

The United Africa Company Limited Statistical and Economic Review.

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wissenschaft : Elisabeth Liefmann-Keil. *Grundriss einer Morphologie des Sparens* : P. Reuff. *Der technische und der monetäre Kostenbegriff. Ein Beitrag zum Problem des symmetrischen Aufbaus der Kostentheorie* : H. J. Muller. *Untersuchungen über den Gültigkeitsbereich des Gesetzes vom abnehmenden Ertragszuwachs* : H. Koch.

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Vol. II, No. 1, April 1950. *Die Besitzverhaltnisse in den land- und forstwirtschaftlichen Betrieben des Bundesgebietes. Statistische Umschau. Statistische Monatszahlen.*

Vol. II, No. 3, June 1950. *Die Angestelltenverdienste im Vereinigten Wirtschaftsgebiet im Mai 1949. Statistische Umschau. Statistische Monatszahlen.*

Wirtschaftsdienst.

Vol. 30, No. 4, April 1950. *Konstruktive Exportförderungspolitik* : C. Kapferer. *Die Rentabilität des Eigenkapitals im Kleinwohnungsbau* : Asta Hampe. *Entwicklungstendenzen der Welternährungslage und der Landwirtschaft* : W. Klatt. *Die niederlandische Landwirtschaft* : J. Breedvelt. *Dänemarks Stellung in der europäischen Nackriegswirtschaft* : W. v. Arnim.

Vol. 30, No. 5, May 1950. *Planwirtschaft und Marktwirtschaft im Verkehrswesen* : A. Predöhl. *Die Liberalisierung als Bestandteil einer systematischen Wirtschaftspolitik* : H. Meinhold. *Das Vorhaben im Bassin des Rio São Francisco* : P. Vageler. *Probleme des Donauverkehrs unter dem neuen Statut* : K. Wessely.

May, 1950. English Supplement. *Is Emigration a Problem ?*

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Vol. V, No. 6. *Friedrich Meinecke. Eine Skizze. Die Militärische Organisation der "Atlantischen Gemeinschaft." Gesetz zum Waffenhilfsprogramm von 1949. Die Saarkonventionen vom 3 Marz 1950. Arbeitsmarkt und Arbeitslosigkeit in der sowjetischen Besatzungszone Deutschlands.*

Vol. V, Nos. 7/8. *Die "Mission der Intellektuellen" ? Justizreform in der Tschechoslowakei. Zur Staatwerdung des neuen Polen. Die internationale Kontrolle des Ruhrgebietes. Italeins Industrie und die europaische Wirtschaft.*

Vol. V, No. 9, 1950. *Wandel und Beständigkeit im Europa Bewusstsein. Der Wandel im sozialen Gefüge der Sowjetunion. Lateinamerikanische Zwischenbilanz.*

Vol. V, No. 10, May 1950. *Über öffentliche Meinung und Meinungsforschung. Die Friedenspläne der Alliierten und die Aufteilung Deutschlands. Europäische Wanderungsbilanz der Weltkriege, I. Teil.*

Vol. V, No. 11, June 1950. *Hofmannsthal der Europäer. Die Neutralitätslehre des Nauheimer Kreises und der geistige Hintergrund des West-Ost Gespräches in Deutschland, I. Teil. Europäische Wanderungsbilanz der Weltkriege, 2. Teil. Der Schuman-Plan und die vierte Tagung des Atlantikrates.*

Vol. V, No. 12, June 1950. *Die Neutralitätslehre des Nauheimer Kreises und der geistige Hintergrund des West-Ost Gespräches in Deutschland, 2. Teil. Die wirtschaftlichen Aussichten Europas. Europäische Wanderungsbilanz der Weltkriege, 3. Teil.*

Bayern im Zahlen.

VOL. IV, NO. 4, APRIL 1950. *Gebiet und Bevölkerung. Ernährung und Landwirtschaft. Industrie und Gewerbe. Handel und Verkehr. Versicherungswesen. Fürsorgewesen. Unterricht und Bildung. Kleine Mitteilungen. Tabellenteil.*

VOL. IV, NO. 5, MAY 1950. *Erwerbstätigkeit. Gesundheitswesen. Finanzen und Geldwesen.*

VOL. IV, NO. 6, JUNE 1950. *Gebiet und Bevölkerung. Erwerbstätigkeit. Ernährung und Landwirtschaft. Industrie und Gewerbe. Handel und Verkehr. Preise, Löhne und Gehälter. Fürsorgewesen. Wahlen.*

Monatsberichte des Österreichischen Institutes für Wirtschaftsforschung.

VOL. XXIII, NO. 4, APRIL 1950. *Die Konjunkturlage. Die wirtschaftliche Lage in Österreich. Österreichische Wirtschaftszahlen.*

SUPPLEMENT NO. 10. *Der Preisindex fur Bauleistungen.*

VOL. XXIII, NO. 5, MAY 1950. *Die wirtschaftliche Lage in Österreich. Aktuelle Fragen der Produktivitatssteigerung. Österreichische Wirtschaftszahlen.*

VOL. XXIII, NO. 6, JUNE 1950. *Stationäre Konjunktur—Bestrebungen zur Stabilisierung der Märkte. Die Lage auf den internationalen Rohstoffmärkten. Österreichische Wirtschaftszahlen.*

De Economist.

MARCH 1950. *De betekenis van de loonpolitiek voor de werkgelegenheid :* J. TINBERGEN. The level of wages influences employment in various ways which may work in opposite directions. The final result cannot be determined with accuracy. The general assumption (among economic experts, in governmental circles and among employers) has been that a lowering of wages would increase employment. This views the question as a special case of the Law of Demand. On the other side, the Trade Unions argue that a fall in the level of wages diminishes the purchasing-power of the workers, and consequently there is no increase in employment. More detailed examination is necessary. It is necessary in time to distinguish between effects in the long and the short period. It is also necessary to distinguish effects in a closed economy and in one with foreign trade; further, it is necessary to distinguish between cases where the rise is in money wages from those where the rise is in real wages. Moreover, a rise in the wage-level is usually combined with other measures. The case usually considered is where the rise in the wage-level can be viewed more or less as an isolated cause. The more complex case arises where it is borne in mind that a rise in the wage-level influences the balance of payments unfavourably. It must therefore lead to measures on the part of the financial authorities to rectify the balance of payments. These again will have repercussions on employment. The other factor influencing the situation is the possible effect of a higher wage-level in increasing productivity. The various cases are considered, and an attempt is made to arrive at a quantitative estimate of the relationship under various conditions. *Het andeel van de landbouw in het nationale inkomen van Nederland :* G. GREIDANUS. An attempt to assess the remuneration of the factors of production in agriculture compared to the corresponding figures in industry. Figures of the national income, with reference to agriculture and industry, are given over a number of years. But it is not permissible to arrive at a comparative estimate of the reward of labour in agriculture and in industry merely by dividing the product by the number of workers. In agriculture it is more difficult to determine the number of labourers. The reward, so arrived at, would represent what goes to land, labour and capital in the two cases, and not merely the share of labour. There is also a difference in the kind of labour, so far as training, skill, etc., is concerned. The general conclusion is that the reward of the three factors of production is lower in agriculture than in industry. But the situation is less unfavourable than it was before the Second World War. *Het Belgische wonder :* F. HARTOG. One of the most striking phenomena in post-war European economy is the prosperity of Belgium in the middle of countries which have great difficulty in keeping straight. The article lists the different circumstances as between Belgium and Holland to which the greater prosperity of Belgium may be attributed.

APRIL 1950. *Europese economische integratie :* P. LIEFTINCK. Economic integration is a new conception, and is best clarified by contrasting it with the older idea of European nationalism. Also it is necessary to consider both the economic and the political phase. Political nationalism has in modern history acquired a more absolute significance. The ideas of "freedom" and "self-determination" became dominant after the first war. Striving after European economic integration involves a breach in international political development. Economic nationalism, as opposed to economic integration, implies the rejection, so far as concerns co-operation in the community of nations, of principles and methods of economic policy which are accepted with a view to co-operation in the national community. This means the application of another economic policy in what relates to division of labour, exchange of goods and circulation of money. Economic nationalism reached its highest point in the years after the great depression, 1929. While there is no logical connection between economic and political nationalism, nevertheless, they may reinforce each other in a high degree. Since 1945, there has been a "crisis" of nationalism, springing from the needs of the conditions in which Europe finds itself. The disparities between great and small powers have grown to hitherto unknown dimensions, owing to causes which are indicated and considered. The co-operation of the O.E.E.C. countries is designed to be permanent, and must be regarded as "an acceptance of collective responsibility which can scarcely any longer be reconciled with an absolute right of self-determination." There are three conceptions of European integration. (1) Acceptance, in a greater or smaller Western Europe, of complete economic freedom, in the sphere of international trade and payments (the old liberal or nineteenth-century conception). (2) The twentieth-century conception of a *marché unique,* involving the abolition of international restrictions and the establishment of a rational inter-European division, of labour; but with a welfare policy, including avoidance of unemployment. This necessarily entails a measure of co-ordination in the national fiscal and monetary policies of the co-operating countries. (3) A European economic integration, through a supra-national Planning Authority. These various approaches are critically considered. *Enkele beschouwingen over de verhouding tusschen economie, econometrie, statistiek en wiskunde :* H. RIJKEN VAN OLST. An inaugural address, concerned with the mutual inter-relationships between economics, mathematics, statistics and econometrics. The lecture deals with the late entry of statistics into the development of theory. Recent developments have made theory more accessible to statistics and econometrics; and in future economics must know how to make use of the teachings of these branches of knowledge. Points calling for further research in the econometric field are indicated. There is a close and indeed inviolable link between economics, mathematics, statistics and econometrics.

MAY 1950. *Enige toepassingen van de leer van de marktvormen :* TH. L. M. THURLINGS. The French Revolution and the Industrial Revolution represented in different ways an impulse towards a free economy. Thereafter the nineteenth century thought in terms of free competition and monopoly. About 1930 there developed the theory of market-forms, thinking in terms of competition, oligopoly and monopoly. The article is devoted to considering two applications of recent theories. The first is related to the fact that some groups of goods are, and some are not, dealt with on markets, bourses or auctions. The second relates to the high costs of distribution. On the first reference is made to the theories of Dr. Polak. There are three questions : (i) why resort is made to concrete markets; (ii) through what causes difference in the shape of markets is brought about; (iii) through what persons or agencies organisation is called into being. On the second question of the high costs of distribution in certain cases, there is a discussion of the market for the sale of fruit and vegetables. *Nationale en internationale maatregelen ten behoeve van de volledige werkgelegenheid :* J. TINBERGEN. A summary of, and a commentary on, certain parts of the United Nations Report on "National and International Measures for Full Employment." *De economische aspecten van het fiscale bankgeheim :* J. GOEDHARTZ. A survey of the economic arguments on the question of "bank secrecy." In Anglo-Saxon countries the problem has never attracted attention to any extent: in England "fiscal-bank-secrecy" is practically universally accepted. The argument deals with the problem in relation to: (i) the question of savings; (ii) the direction and extent of international capital movements; (iii) the position of banks in society. Fiscal bank-secrecy was abolished in Holland in 1945. The problem of its restoration will probably come up for discussion before long. The conclusion of the article is that cogent arguments, of an economic or monetary nature, for the restoration of "fiscal-bank-secrecy" cannot be adduced.

JUNE 1950. *Coal in U.S. Economy :* V. S. SWAMINATHAN. (In English.) A survey of the history, the present-day problems and the prospects of the American coal-mining industry: "The long-term outlook for American coal and lignite must be deemed bright." *De objectieve determinanten van de omloopsnelheid van het geld :* G. A. KESSLER. A detailed discussion and criticism of the formula given by Dr. Zijlstra in his book (1948) on the rapidity of circulation of money. Dr. Zijlstra replies in an addendum to the article. *Over de terminologie in het marktonderzoek :* J. VAN REES. The Netherlands Institute for Efficiency set up a study group for market-analysis and trade-cycle investigation. This group found themselves confronted with the necessity of systematising existing terminology, and appointed a committee to consider the matter. The present article is a summary by the Chairman of the questions at issue, making use of observations of other members. Guiding principles in nomenclature are considered. Most of the article is concerned with a close analysis of the meaning of various phrases in which the word "market" occurs.

Aussenwirtschaft.

VOL. V, NO. 1, MARCH 1950. *Betrachtungen zur Aussenwirtschaftspolitik :* H. BACHMANN, A. BOSSHARDT and E. KUNG. *Devisenzwangswirtschaft : das Kardinalproblem der internationalen Wirtschaft :* W. RÖPKE. *Freihandelszonen :* R. SCHÜLLER. *Formen und ökonomische Bedeutung der modernen Auswanderung :* F. VITO. *Literatur des Jahres 1949.*

VOL. V, NO. 2, JUNE 1950. *Betrachtungen über die kommende schweizerische Zolltarifrevision :* A. BOSSHARDT. *Der Schweizerfranken als harte und weiche Währung :* E. KÜNG. *Die ausländischen Währungsabwertungen und die Revision des schweizerischen Zolltarifes :* E. HEUSS. *Aus der Arbeit des schweizerischen Instituts für Aussenwirtschafts und Marktforschung im Jahre 1949 :* W. HUG.

Schweizerische Zeitschrift für Volkswirtschaft und Statistik.

VOL. 86, NO. 2, APRIL 1950. *Bericht über die Tätigkeit des Paritätischen Stabilisierungsausschusses der wirtschaftlichen Spitzenverbände :* E. BÖHLER. *Remarques sur la théorie du chômage technologique :* J. VALARCHÉ. *Ein einfaches Verfahren zum Auffinden der Normalkurve zu einer gegebenen Häufigkeitsverteilung :* H. WIESLER. *A Method of Constructing Community Indifference Curves :* W. F. STOLPER.

VOL. 86, NO. 3, JUNE 1950. *Empirische Konsum- und Sparfunktionen :* V. LA ROCHE. *Der Trend des ökonomischen Denkens in der Gegenwart :* E. SCHNEIDER. *Abschreibungen und Reservebildung in der Steuerpolitik :* F. Z. BODMER.

Kyklos.

Vol. IV, No. 1, 1950. *Walter Eucken. In memoriam :* E. Salin. *The Tyranny of Idealism :* J. V. Van Sickle. *Gravitationszentrum und Dynamischer Ablauf :* K. Brunner. *Einwanderungsprobleme Brasiliens :* E. Willems. *La nature et les fonctions du profit dans l'Ordre Coopérative :* V. Rouquet la Garrigue.

Giornale Degli Economisti e Annali di Economia.

September–October 1949. *Le macrodecisioni :* F. Perroux. *Schema interpretativo della morbilità di talune malattie infettive :* F. Brambilla. *La teoria della crisi alla luce dei recenti documenti :* V. Marrama. *Significato economico della domanda sociale dei beni :* E. Ghetti. *Motivi personali e motivi critici sull'equazione dello scambio :* T. Biagiotti. *A proposito di un nuovo trattato sull-economica :* A. Bordin.

November–December 1949. *Effetti di reddito e curve di domanda :* A. Macchioro. *Genesi della riforma corporativa di Pio IX :* L. Dal Pane. *Di alcuni problemi tecnici ed economici agli albori del risveglio industriale italiano :* A. Fossati. *Liberismo, e regime parlamentare in Gaetano Mosca :* P. Rossi. *Le Lezioni di economia del Bresciani–Turroni :* G. Di Nardi. *Su un nuovo tentativo di teoria dinamica :* G. Demaria. *Due leggi di economia aziendale :* P. Gennaro. *La politica degli alti salari :* C. Casali.

Vol. IX, Nos. 1–2, January–February 1950. *Scienza economica ed economisti nel momento presente :* L. Einaudi. *I limiti dell'economia matematica :* E. Zaccagnini. *L'analisi delle attività nell'equilibrio generale :* P. Castiglioni. *Ancora intorno agli studi di Vilfredo Pareto sulle funzioni di domanda e di offerta :* G. Sensini. *Grande e piccola irrigazione nel mezzogiorno :* V. Ricchioni. *Sul prodotto vi variabili casuali indipendenti :* G. Pacioni.

Vol. IX, Nos. 3–4, March–April 1950. *La durata del capitale fisso e gli effetti dei tributi :* A. Scotto. *La revisione critica della teoria dei valori internazionali :* A. Gambino. *Una questione d'attualità : il problema di un'economia del benessere :* A. Macchioro. *La valutazione della pressione tributaria globale e il suo significato :* M. Levi. *Il metodo delle trasformate euleriane di prima specie ai fini delle rappresentazione analitica delle curve di concentrazione :* V. Amato. *Nello spirito dello "Zollverein" :* T. Bagiotti.

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Vol. III, No. 1, February 1950. *Germany and the Long Term Program for European Reconstruction :* F. Baade. *The Crisis of the Marshall Plan :* T. Balogh. *The Economic Consequences of the Atlantic Pact :* G. Demaria. *Les déterminantes des cours des changes dans les dévaluations monétaires contemporaines :* L. Dupriez. *The Dollar Shortage and Devaluation :* R. F. Kahn. *Elasticity Pessimism in International Trade :* F. Machlup. *On the Effects of National Economic Planning on the International Division of Labor :* J. Pedersen. *La persistance du déséquilibre structurel :* J. Weiller.

L'Industria.

No. 1, 1950. *La storia dell'economica in relazione allo sviluppo sociale :* W. Stark. *I sipario di ferro della moneta :* W. Röpke. *La convertibilité des monnaies :* R. Mossé.

Rivista Internazionale di Scienze Sociali.

Vol. XXII, No. 2, March–April 1950. *La difesa della salute in un sistema di sicurezza sociale :* A. Gemelli. *Le variazioni dei livelli dei prezzi nazionali in dipendenza dei trasferimenti dei capitali :* E. Calcaterra. *Le forze contrattuali negli accordi per l'emigrazione : analisi di uno schema teorico :* H. R. Manfra.

Review of the Economic Conditions in Italy (Banco di Roma).

VOL. IV, NO. 3, MAY 1950. *The Problem of Depressed Areas and the Financing of their Economic Development :* C. BRESCIANI TURRONI.

Banca Nazionale del Lavoro Quarterly Review.

JANUARY–MARCH 1950. *International Economic Equilibrium and Foreign Exchange Rates :* R. MOSSÉ. *The Development of Export Trade of European Industrial Products and its Financing :* P. SARACENO. *American Foreign Investments :* M. NADLER. *On the Congruence of Exchange Rates under a System of Bilateral Trade :* G. D'IPPOLITO. *Recent Trends in the Geographical Distribution of Italy's Foreign Trade : 1938–1949 :* G. PIETRANERA.

Italian Economic Survey (The Association of Italian Joint Stock Companies).

MARCH–APRIL 1950. *Report on the Economic Situation of Italy, presented by the Minister of the Treasury to the House of Deputies on January 30, 1950.*

MAY–JUNE 1950. *Italy's Profit and Loss Account.*

Ekonomisk Tidskrift.

VOL. LII, NO. 1, MARCH 1950. *Institutionalism :* JOHAN ÅKERMAN. Professor Åkerman contributes a sympathetic and revealing assessment of the importance of Thorstein Veblen in the evolution of modern economic thought. To describe Veblen as America's Marx is misleading. Dialectical materialism was alien to Veblen's way of thinking. He published a theory of industrial fluctuation in 1904 which was in several respects similar to Wicksell's in *Geldzins und Guterpreise* (1898). His influence on the work of the institutionalists, *e.g.*, Wesley Witchell, J. R. Commons, R. G. Tugwell, C. G. Means and, perhaps, J. M. Clark, was profound. Veblen's approach needs to be further developed; the next task is to build a bridge between economics and social philosophy, since the mathematical and statistical lines of development are now showing rapidly diminishing returns. *Reproduction Rates and Quantitative Comparisons as between Different Generations :* CARL-ERIK QUENSEL. Recent work has tended to throw doubt on the usefulness of reproduction rates obtained from the data of any particular year. Where sufficient data are available it is possible to calculate the quantitative relationship between the mother generation and the daughter generation. The first part of this article gives the results of such an analysis for Sweden. For the number of girls born in 1875, 1880, 1885 . . ., we are given: (*a*) the number per 1,000 who reach 15 years of age and (*b*) the number of daughters born to them at ages 20, 25 . . . 50. The analysis shows that since 1875 not one of the groups has reproduced itself. This is partly due to emigration, since no account could be taken of daughters born overseas to women who had left Sweden. The author corrects for this factor and then finds that the 1890 group was the first which failed to reproduce itself. The article concludes with some striking calculations of how the burden of maintaining young and old dependants has changed from one generation to another. *Wages Policy under Full Employment :* ERIK LUNDBERG. A critical account of recent discussions of this theme in Sweden, particularly the views of economists, such as Gösta Rehn, who are prominent in the trade-union movement. The author praises the quality of these contributions, which, in his opinion, are more thought-provoking than the corresponding debates in the U.S.A. and England. *A Reply to Professor Erik Lundberg :* GÖSTA REHN. Mr. Rehn had argued that the way to make full employment compatible with normal trade-union activity was to allow free collective bargaining and offset the resulting wage increases by taxing consumers' goods. This policy would maintain real wages at about the same level as under wage restraint, but it would have the added advantage of keeping profits low. Professor Lundberg had criticised this on several grounds, for example, that the strain on the balance of payments would lead to currency depreciation. In his reply Mr. Rehn deals fully with all the objections and emphasises that a Government that controls a good part of the national income can meet disturbances in the foreign balance more effectively than the automatic market mechanism.

Skandinaviska Banken Aktiebolag.

VOL. XXXI, NO. 2, APRIL 1950. *Post-war Business in the United States :* PER JACOBSSON. *The "Mail Cheque" :* P. BRUNDELL. *What is Meant by the Value of Money ? :* U. HERZ. *The Riksbank and the Value of Money. The Economic Situation during the First Quarter of 1950.*

VOL. XXXI, NO. 3, JULY 1950. *In the Service of Foreign Trade :* P. BRUNDELL. *European Payments :* P. JACOBSSON. *Income Distribution Changes in Different Countries :* K.-G. HAGSTROEM. *Employment Conditions in the Commercial Banks :* STIG H. LINDHOLM. *Occupations of Men and Women. Present and Pre-War Foreign Trade.*

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JUNE 1950. *The Economic Situation. Sveriges Kreditbank AB—the New State Commercial Bank in Sweden. Sweden's Trade with Great Britain. Industrial Classification of the Lendings of the Svenska Handelsbanken.*

Nationaløkonomisk Tidsskrift.

NO. 1–2, 1950. *Housing Problems :* JOHS. KJPERBØL. *The Regulation of Danish Agricultural Exports :* KNUD HANSEN. *Some Comments on the preliminary results of the Taxation Commission :* V. VINGE MADSEN. *State Finance and Real Estate Credit :* TH. THORSTEINSSON. *Who belong to Consumers' Co-operatives ? :* JØRGEN PEDERSEN.

Økonomi og Politik.

VOL. 23, NO. 4, OCTOBER–DECEMBER 1949. *De forenede Staters udenrigspolitik :* S. HENNINGSEN. *Det internationale glødelampekartel :* B. FOG. *Den internationale økonomiske situation.*

VOL. 24, NO. 1, JANUARY–MARCH 1950. *F.N.s Virksomhed i 1949 :* PREBEN V. ASKGAARD. *Den fjerde faglige Internationale og dens forgængere :* E. JACOBSEN. *De engelske parlamentsvalg 1945 og 1950 :* J. DANSTRUP. *Grækenland under borgerkrigen :* E. RESKE-NIELSEN. *Den internationale økonomiske situation : U.S.A.*

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VOL. 3, NO. 1. *Av det norske jordbruks problemer :* T. SINDING. *Statsbudgetens behandling i riksdag och statsutskott :* R. TØRNGREN and R. v. FIEANDT. *Förbrukningsundersokningarna och deras metoder :* G. MODEEN.

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VOL. I, NO. 4, NOVEMBER–DECEMBER 1949.
VOL. I, NO. 5, JANUARY–FEBRUARY 1950.
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Moneda y Crédito.

NO. 31, DECEMBER 1949. *Las analogías entre la producción y el consumo :* J. M. N. MORA. *La teoría social de la fisiocracia :* M. G. PELAYO. *Sistema y régimen financiero de los Montepíos Laborales :* J. P. LEÑERO. *Lo que deja fuera la Ciencia económica :* F. EGEA.

El Trimestre Económico.

VOL. XVII, NO. 1, JANUARY–MARCH 1950. *Ciencia e ideología :* J. A. SCHUMPETER. *Los braceros mexicanos en Wisconsin :* E. FLORES. *Feudalismo y capitalismo en la historia económica de México :* J. BAZANT. *El tipo de equilibrio del cruzeiro :* E. GUDIN and J. KINGSTON.

Revista de Ciencia Aplicada.

MARCH–APRIL 1950. *Estructuras espaciales* : M. G. ORTEGA.

Revista de Economia.

MARCH 1950. *Sobre os rendimentos pessoais em Portugal* : J. R. FREIRE.

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VOL. III, NO. 4, DECEMBER 1949. *A Taxa de Equilíbrio do Cruzeiro* : E. GUDIN and J. KINGSTON. *Da Teoria do Multiplicador à Teoria dos Pontos de Impacto Decisivo* : R. MOSSÉ. *Densidade de População e Padrões Nacionais de Vida* : L. BUQUET. *A Elasticidade da Procura Norte-Americana de Café* : H. SCHLITTER SILVA.

VOL. IV, NO. 1, MARCH 1950. *Características Gerais da Economia Brasileira* : C. FURTADO. *Ciclos Econômicos na Economia Dirigida* : G. HABERLER. *Inflação Reprimida e Reforma Monetária na Alemanha Ocidental* : J. H. FURTH. *Comércio e Investimentos em Áreas Sub-desenvolvidas* : H. W. SINGER.

Revista de Ciencias Económicas.

VOL. XXXVII, SERIES III, NOS. 17–18. *La dialectización de la dialéctica* : J. P. ARRARTE. *El concepto de ahorro a través de Keynes y de Robertson* : E. G. VAZQUEZ. *Sugestión de un metodo para registración y control de cuentas corrientes* : I. L. FAINMAN.

VOL. XXXVII, SERIES III, NOS. 19–20. NOVEMBER–DECEMBER 1949. *La era barroca* : J. P. ARRARTE. *Los impuestos y el ciclo económico* : A. K. VASENA. *El dilema de la contabilidad : capital y utilidades ante ficción y realidad* : J. F. PUNTURO.

VOL. XXXVIII, SERIES III, NO. 21. *Productividad o improductividad de los servicios en general y en particular de los servicios públicos* : G. AHUMADA. *El futuro de las finanzas* : B. MOLL. *Efectos de la inflación sobre el capital y los beneficios* : R. C. JONES. *Utilidades liquidas y realizadas* : J. OLARAN CHANS.

Voprosy Ekonomiki (Russian text).

NO. 1, 1950. *Speech of P. N. Poselov on January 21, 1950, at the Commemoration Meeting in Moscow on 26th Anniversary of Lenin's death. To Make Full Use of Reserves of Basic Capital. Lenin and Stalin—the Inspirers and Organisers of Socialist Emulation in Industry* : N. MASLOVA. *Stalin and Socialist Emulation in Kolkhozy* : A. TERAEVA. *Stalin on the Crises of the Capitalist System of World Economy* : A. SCHNEERSON. *Gold as a World Money and the Currency Dictatorship of the U.S.A.* : F. MIKHALEVSKI. *The Stalin Plan for the Transformation of Nature in Action (compiled from material in the central and local press)* : A. SAVIN. *On Co-ordination of Scientific Work in the Field of Economics (conference in the Section of Economics and Law of the Academy of Sciences of the U.S.S.R.). Criticism and Book Reviews* : *A Book on the U.S.S.R. State Budget* : P. LIAKHOV. *The False Theory of Keynes* : V. VOLODIN. *Problems of Post-war Japan* : YA. PEVSNER.

NO. 2, 1950. *Stalin—the Theoretician and Organiser of Socialist Disposition of Productive Forces* : V. VASIVTIN. *Ways of Improving the Use of Equipment in Laborious Branches of Industry* : L. BERRI. *Problems of Economic Accounting in the Factory (from the Experience of the Kuznets "Stalin" Metallurgical Combine)* : G. ZELTSER. *The State and the Economic Structure of the Chinese People's Republic* : G. KHARAKHASHIAN. *Two Systems—Two Goals of Post-war Economic Development* : E. MANIEVICH. *The Ripening of the Agrarian Crisis in the Capitalist Countries* : A. PETRUSHOV. *Criticism and Book Reviews* : *To Make Wide Use of the Untapped Resources of Wind Power* : I. BUDNITSKI. *For the Deep Study of Problems of Economics and Planning of Automobile Transport* : A. KURNAEV. *Impoverishment of the Working Class in Germany* : V. SHUMILIN. *Oil and the Foreign Policy of the Imperialist States* : G. MOSKVICHIOV. *A Useful Book on Egypt* : G. VERSHININ.

No. 3, 1950. *The Upsurge in the Material Well-being and Culture of the Soviet People. The Strengthening of the Soviet Rouble :* G. KOZLOV. *A. I. Herzen's Struggle for the Peasant Type of Bourgeois Agrarian Development in Russia :* V. MARTINOVSKAIA. *Successes of the Vietnam Democratic Republic :* S. POGOSOV. *Debauch of Militarism in the Marshallized Countries :* A. ALEKSEEV. *Functions and Significance of Soviet Finances :* V. DIACHENKO. *Personal Accounting of Stakhanovites and Measures for Saving Materials and High-quality Output.* (*From the experience of leading enterprises*) *:* V. MNATSAGANOVA, A. SOKOLOVSKI. *Impoverishment of the workers in Turkey :* V. VALVISKI. *Criticism and Book Reviews : A Leading Giant Grain Sovkhoz :* B. LUKIANOV. *A Valuable Book on Chinese History :* V. MASLENNIKOV. *Money in Feudal Economy :* F. POLIANSKI. *Model Subjects of Dissertations on the Economic Sciences.*

Planovoe Khoziaistvo (*Russian text*).

No. 1, 1950. *The Powerful Upsurge of the NationalEconomy of the U.S.S.R. :* EDITORIAL. *Soviet Metallurgy on a New Upsurge :* N. DIAKONOV. *Reserves for Lowering Costs of Industrial Production :* A. ZVEREV. *New Types of Machines for Socialist Agriculture :* V. KUROTCHENKO. *The Uzbek People in the Struggle for Fulfilment and Overfulfilment of the Post-war Five Year Plan :* S. ZIADULLAEV. *Political and Economic Reforms in the Chinese People's Republic :* E. KOVALEV. *Criticism and Book Reviews : The Working Capital of Industrial Enterprises :* A. BIRMAN.

No. 2, 1950. *Stalin's Care for the Well-being of the Nation. Priority Tasks of the U.S.S.R. Coal Industry :* A. ZASIADKO. *For the Full Discovery and Use of Productive Capacity in Industry :* V. ALFEEV and A. KOROTKOV. *Problems of Planning the Material—Technical Supply of the National Economy of the U.S.S.R. :* E. LOKSHIN. *For new Successes in the Struggle for High Crop Yields :* B. SAVELIEV. *Impoverishment of the Workers in Capitalist Countries :* V. CHERMENSKI. *Criticism and Book Reviews : The Scientific Study of Problems of Planning Transportation :* A. MOTS.

Gospodarka Planowa (*Polish text*).

JANUARY 1950. *The Methods, Problems and Principles of Planning :* B. MINC. *The Immediate Tasks of Statistics in Democratic Poland :* Z. PADOWICZ. *The Tasks of the Agricultural Bank :* L. MAKOWSKI. *The Introduction of Excess and Unnecessary Credits into Circulation :* H. WITKOWSKI. *From Soviet Economic Experience : Trade Agreements as an Instrument for the Fulfilment of State Plans :* I. BARANOW. *The Hungarian Six Year Plan. Planning foreign trade in Czechoslovakia :* P. CZERWIŃSKI.

FEBRUARY 1950. *The Preliminary Budget for 1950 :* L. KUROWSKI. *The Most Important Technical Problem under the Six Year Plan :* I. BOREJDO. *The Economic Plan of the Ministry of Agriculture and Agricultural Industry :* Z. KOKELI. *Craft Co-operatives in the 1950 Plan :* K. GADOMSKI. *Concerning the New Planning Methods for Current Accounts :* S. SKRZYWAN and A. KMIOTEK. *Some Problems of German Economy :* A. KADUSZKIEWICZ. *From Soviet Economic Experience : Personal Saving Accounts—a New Form of Socialist Competition and a New Method of Trade Accounts :* S. TATUR. *Experience of the " Red Guard " Heavy Metallurgical Factory at Kirovograd :* A. MERKUŁOV.

Obzor Národohospodářský (*Czech text*).

No. 7, MARCH 1950. *The State Bank and its functions :* L. CHMELA. *The Stock Level in Industry :* F. BERNAT. *The Swedish Cheap Money Policy :* D. J.

No. 8, APRIL 1950. *A Step Further on Our Road to Socialism :* B. SPÁČIL. (A discussion of the Czechoslovak Budget for 1950.) *The National Accounts :* J. KREJČÍ. (A very useful article containing also a good diagrammatical illustration of the formation, distribution and expenditure of the national income.) *Quality Considerations in the Interchange of Goods with other Countries :* J. Tuček. *The Economic Development of Rumania :* M. Franc.

Each issue contains also short notes on current international and domestic problems of economic and political interest together with some book reviews.

The Yenching Journal of Social Studies.

Vol. IV, No. 2, February 1949. *Comparative Security Systems :* Chih-Ang Chiang. *Rural Education in Transition . a study of old-fashioned Chinese Schools (Szu Shu) in Shantung and Szechuan :* T'ai-Ch'u Liao. *The Kinship System of the Giarung :* Lin Yueh-Hwa. *Chinese Frontier Diplomacy : the coming of the Russians and the Treaty of Nertchinsk :* Agnes Fang-Chih Chen. *Kiakhta Boundary Treaties and Agreements :* Agnes Fang-Chih Chen.

The Economic Studies Quarterly (In Japanese).

Vol. I, No. 2, April 1950. *Obituary : Professor J. A. Schumpeter :* Seiichi Tôbata. *Critic on the Keynesian Theory of Employment :* Yukichi Kurimura. *Some Remarks on the "Mini-Max Principle" :* Yuzo Yamada. *Utility, its Measurability and Relatedness, reviewed from the Probability Standpoint :* Seiichi Nakamuar. *Some Considerations on Homogeneity and Non-homogeneity in Classical and Keynesian Economics :* Yoshihiro Okamoto. *Notes on Risk, Uncertainty :* Ryuichiro Tachi. *A Method of Quantitative Expression of Marginal Conception :* Masaaki Yasukawa.

Bank of Tokyo (Quarterly Survey).

Vol. I, September 1949. *Deflationary Conditions in Japan. Foreign Trade of Japan. Overstock in the Export Market. Towards Abolishment of Price Adjustment Subsidies. Statistical Section.*

Vol. II, December 1949. *Condition of Japan's Economic Self-Support. Japan's Security Market and Long-Period Finance.*

NEW BOOKS.

British.

The Achievement of 1949 and the Outlook for 1950. London: British Iron and Steel Federation, 1949. 10″. Pp. 8.

[A short account of steel production in 1949, new investment in steel plants, the demand for steel and steel prices. Even after the increases of the first quarter, British steel was cheaper than that of any large producing country except Germany, and in certain cases it was below the German price. The targets for 1950 are briefly set out.]

American Economic Association. Readings in the Theory of International Trade. London: Allen & Unwin, 1950. 8½″. Pp. xvi + 637. 30*s*.

[It is very good to know that the invaluable American Economic Association Series of Readings in different branches of economics are to be published, at least in some cases, in England, and in consequence to become much more readily available for English students. That is particularly welcome in the case of this volume, which contains a large number of important articles, not only by American but also by European economists; not all of them are readily available even in a good library, and few of them are so readily available to a student. The selection, by Professors Howard Ellis and Lloyd Metzler, has been well made, and a classified bibliography of additional articles will enable the real specialist to indulge his fancies.]

BENNETT (L. G.). Financial Results on 34 Fruit and Market Garden Holdings in the Southern Province, 1948–1949. University of Reading: Department of Agricultural Economics, 1950. 8″. Pp. 6.

[A roneoed summary of the financial results of thirty-four fruit and market garden holdings in the group of southern counties. Sources of income and forms of expenditure are analysed in detail, the margin between receipts and expenses per acre is in most cases very small, but the labour of the family is included in expenses, and it is not possible to judge what the net earnings of the family may have been.]

BISSET (G. B.). Costs and Returns from Wheat Production in the Southern Province in 1948. University of Reading: Department of Agricultural Economics, 1949. 10″. Pp. 6. 2*s*.

[The average net cost of wheat per acre for this sample of thirty farms was £13 14*s*. 5*d*. The gross returns from grain and subsidy were £24 2*s*. 9*d*., with a further £1 12*s*. 11*d*. for the value of the straw. Only in one case was there a deficit, and four farms showed surpluses of over £20 per acre.]

BISSET (G. B.) and BLAGBURN (C. H.). Financial Results on Farms in the Southern Province in 1947/48 and in 1948/49. University of Reading: Department of Agricultural Economics, 1950. 9½″. Pp. 39. 2*s*. 6*d*.

[An analysis of the farming operations on the farms in the Southern Province of England on which Mr. Blagburn based his article published in the ECONOMIC JOURNAL of March 1950. Valuable tables give not only the usual analyses of expenditure and income, but also show the capital and other resources used per 100 acres and per £100 of net farm output.]

British Exports and Exchange Restrictions Abroad. London: Swiss Bank Corporation, 1950. 8½″. Pp. 118.

[A convenient handbook of information about British trade with different countries, small as well as big, giving the figures of British imports from and exports to them, the currency and its exchange rate, the necessity or absence of import licensing, and other similar data.]

CLEGG (H.). Labour in Nationalised Industry. London: Fabian Publications and Victor Gollancz, 1950. 8½″. Pp. 40. 2*s*.

[This is an Interim Report of a Committee set up by the Fabian Society to study the problem of industrial relations under nationalisation. Its immediate purpose is to describe what is actually happening in the nationalised industries, in the fields of collective bargaining, joint consultation and industrial relations generally and to show what are the questions specially needing further investigation and report.]

CLEGG (H. A.). Labour Relations in London Transport. Oxford: Basil Blackwell, 1950. 8½″. Pp. viii + 188. 15*s*.

[To be reviewed.]

CONNELL (K. H.). The Population of Ireland, 1750–1845. Oxford: Clarendon Press, 1950. 8½″. Pp. xi + 293. 18*s*.

[To be reviewed.]

DEUTSCHER (I.). Soviet Trade Unions; their place in Soviet labour policy. London and New York: Royal Institute of International Affairs, 1950. 7½″. Pp. ix + 156. 7*s*. 6*d*.

[To be reviewed.]

FLANDERS (A.). A Policy for Wages. London: Fabian Publications and Victor Gollancz, 1950. 8½″. Pp. 31. 1*s*. 3*d*.

[This is a frank and honest discussion of the very real problems of wage-determination under conditions of high and stable employment. Not the least of the difficulties pointed out by Mr. Flanders is that the methods of wage determination appropriate to socialism and high employment may be very different from those appropriate to *laissez-faire* and trade cycles; but in a political democracy the institutions must be appropriate to either. Mr. Flanders suggests that what is needed is a National Wages Board to supervise decisions of all statutory wage-fixing bodies and all voluntary collective agreements, to propose reforms of existing wage structures and generally to act as the final and supreme arbitration authority. He outlines the principles that might guide such a body in adjusting the wage structure to general and particular changes of productivity and conditions.]

FORD (P.) and THOMAS (C. J.). A Survey of the Industrial Prospects of the Southampton Region. Oxford: Blackwell, 1950. 8½″. Pp. 67.

[Prof. Ford and Mr. Thomas made this short survey of the Southampton Region at the request of the Borough Council and as an introduction to the future planning of the development of Southampton. They start with the difficult task of guessing the future population. They have rightly assumed that the changes will be not widely different from those of the country as a whole. They then proceed to a detailed and most interesting analysis of the industrial activity, employment and prospects of the area. Some 30% of all employment comes from overseas trade and capital goods construction, with obvious risks of unemployment. With the decasualisation of dock labour, one main source of seasonal unemployment has disappeared. But ship-repairing is likely again to revert to its pre-war seasonality and the final verdict is that more diversification of industry is desirable. The building labour force is inadequate to restore the town and provide new industries with factories, and the building of the new oil refineries must depend on temporarily imported labour. The building labour may, perhaps, be strengthened from redundant shipyard labour, of which there is about a 15% surplus. Attempts to estimate possible employment and to compare it with the available labour force for 1962 suggest a small deficiency of labour. It is not clear, however, what allowance the authors have made for manpower economies due to technical progress.]

FREEMAN (T. W.). Ireland: its physical, historical, social and economic geography. London: Methuen, 1950. 8½″. Pp. xiv + 555. 32*s*. 6*d*.

[A useful geography text-book of Ireland, which includes chapters on historical geography, population, settlement, agriculture, industry, trade and communications which may be of value to students of economics.]

Fuel Efficiency in the Steel Industry. London: British Iron and Steel Federation, 1950. 10″. Pp. 10.

[A study of the economies achieved during the past thirty years in fuel consumption in steel-making. In 1924, the coal equivalent of fuel used to make 1 ton of finished steel was 64 cwt. By 1938 it was down to 41 cwt. By 1949 it had been reduced to 37 cwt.]

GREIDANUS (T.). The Value of Money. London: Staples Press, 1950. 8½″. Pp. vii + 394. 21*s*.

[To be reviewed.]

HANSON (E. P.). New Worlds Emerging. London: Gollancz, 1950. 8½″. Pp. xx + 385. 16*s*.

[To be reviewed.]

HOGBEN (L.). Chance and Choice by Cardpack and Chessboard. An introduction to probability in practice by visual aids. Vol. 1. London: Max Parrish, 1950. 10″. Pp. 417. 50*s*.

[To be reviewed.]

ISSAWI (C.). An Arab Philosophy. Selections from the Prolegomena of Ibn Khaldun of Tunis (1332–1406). London: John Murray, 1950. 6½″. Pp. xiv + 190. 6*s*.

[This volume, by a scholar with a distinguished record at Oxford and now Professor in Beirut, contains extracts in English from Ibn Khaldun's writings, dealing with different aspects of the human and social sciences. Successive chapters contain extracts dealing with method, geography, economics, public finance, population, society and the state, religion and politics, knowledge and society, the theory of being and the theory of knowledge. Mr. Issawi has had the good sense to translate into a style and terminology familiar to students of the social sciences. But it is not only Mr. Issawi's skill, but the genius of Ibn Khaldun which makes this a most interesting and unusual discovery, much helped by a useful introduction.]

JACKSON (G.). Canada's Export Prospects with especial reference to Lumber and Timber. Toronto: Canadian Lumbermen's Association, 1950. 10½″. Pp. 29.

[This address opened a discussion before the Canadian Lumbermen's Association during February 1950. The author was primarily concerned with the prospects of Canadian exports to the U.S.A. and to the U.K. As compared with the four years before the war, the volume of exports in the first four post-war years to the U.S.A. had doubled and those to the U.K. had increased by about 6%. This naturally leads the author into broader questions of the U.K. balance of payments, the sterling balances, British politics and U.S. tariff policies.]

KEYNES (FLORENCE A.). Gathering up the Threads. Cambridge: Heffer, 1950. 8½″. Pp. 120. 12*s*. 6*d*.

[This charming volume of family history by Lord Keynes's mother ought to be in the hands of all who are interested in Keynes as a person. She traces the history of both sides of the family. It may be news even to those who had been regaled with his family history to hear that Keynes's maternal great-great-great grandfather was killed in a smuggling affray with the revenue men near Lancing in 1768; the family predilection for free-trade is clearly of long-standing. It is perhaps characteristic of the age that the son, Keynes's great-great grandfather, used a legacy from his uncle, head of the smuggling organisation, to be trained for the Nonconformist ministry. There is printed here in considerably more detail much of the biographical material which, thanks to Mrs. Keynes, was included in Prof. Robinson's obituary of Lord Keynes, published in the ECONOMIC JOURNAL of March 1947.]

LEVY (A. B.). Private Corporations and their Control. 2 vols. London: Routledge & Kegan Paul, 1950. 8½″. Pp. x + 916. 70*s*.

[To be reviewed.]

MARSH (A. I.). Contrasts in Agricultural Price Policies. University of Oxford: Institute for Research in Agricultural Economics. 1950. 8½″. Pp. 30. 1*s*. 6*d*.

[This paper sets out to consider the general problems of agricultural prices and incomes and to illustrate the methods of control from the U.S.A., as an example of a large self-sufficient country with exportable surpluses, New Zealand, as an agricultural exporter and the United Kingdom as a country with a domestic agriculture but primarily dependent on imports.]

MARSHALL (T. H.). Citizenship and Social Class and other essays. London: Cambridge University Press, 1950. 7½″. Pp. 155. 10*s*. 6*d*.

[To be reviewed.]

MAUNDER (A. H.). An Outline of Economic Principles in Farm Organization and Management. University of Oxford: Institute for Research in Agricultural Economics, 1950. 8½″. Pp. 21. 2*s*.

[Farm organisation is defined as the formulation of policy as distinct from farm management—its execution. The pamphlet briefly discusses various problems of organisation and the decisions to be made: the products or combinations of products to be produced, the best combination of factors for their production, the best combination of enterprises (such as wheat, sheep, poultry) and the extent to which they are alternatives or supplementary or complementary to each other, the adjustment of farming output to changes of prices. A few final pages touch briefly on problems of management, such as labour supply, capital and marketing.]

MEINHARDT (P.). Inventions, Patents and Monopoly. 2nd edition. London: Stevens, 1950. 8½″. Pp. xvi + 320. 30*s.*

[This book, written by a lawyer for lawyers, discusses nevertheless in broader terms, and with a knowledge of some of the economic literature of the subject, the problems of the making of inventions, the rewards of inventors and originators, the nature of patents, the characteristics of a patentable invention, the maintenance of a patent, litigation and finally the prevention of abuses of patent monopoly. This new edition was finished after the report of the Swan Commission became available and takes account of its recommendations.]

MOLLETT (J. A.). Financial Results of Grazing Cattle in the South Midlands in 1949. University of Reading: Department of Agricultural Economics, 1950. 10½″. Pp. 9. 2*s.*

[This survey shows that seventeen out of nineteen farms showed a profit on grazing cattle (averaging slightly over £3 10*s.*) during the unfavourable season 1949. The net margin was considerably higher on steers and heifers than on cows.]

MUNSHI (M. C.). Comparative Wage Levels, Agricultural and Industrial. Bombay: Hind Kitabs, 1950. 8½″. Pp. 57. Rs. 2/8.

[This short paper—described by its author as a "fragment"—sets out for a number of countries the comparative trends of industrial and agricultural wages, covering in most cases the years 1929–43. Comparison is made, so far as statistics permit, with similar trends in India.]

The Nuffield Foundation, Fifth Report. Oxford: University Press, 1950. 8½″. Pp. 85.

[An account of the work supported by the Nuffield Foundation during the year ending March 31, 1950.]

PASDERMADJIAN (H.). Management Research in Retailing. London: Newman Books, 1950. 8½″. Pp. xii + 177. 16*s.*

[To be reviewed.]

The Pattern and Finance of Foreign Trade. With special reference to the City of London. London: Europa Publications (for the Institute of Bankers), 1949. 8½″. Pp. 231. 15*s.*

[This book prints a series of lectures delivered to the Institute of Bankers International Summer School at Christ Church, Oxford, during September 1949. A distinguished group of lecturers included the President of the Board of Trade, Prof. Sir Hubert Henderson, Prof. R. G. Hawtrey, Prof. M. G. Kendall, Mr. Marcus Fleming, Mr. Paul Bareau, Mr. Manning Dacey, Mr. Maurice Magrah, Mr. Leslie Gamage, Mr. L. K. O'Brien, Mr. H. L. Fraser and Sir Philip D'Ambrumenil. All the lectures dealt with aspects of the problem of international trade, or with the closely relevant problems of financial policy.]

People and Paint. Slough: Imperial Chemical Industries, 1950. 8½″. Pp. 81.

[A field survey, by Mass-Observation, of the views of house-wives on the subject of paint finishes and colour in the home.]

RAISTRICK (A.). Quakers in Science and Industry. London: Bannisdale Press, 1950. 8½″. Pp. 361. 21*s.*

[To be reviewed.]

REID (D. C.). Money and Organisation. London: Macdonald & Evans, 1950. 8½″. Pp. ix + 128. 10*s.*

[This is a clear account of the effects of the inflations of the two recent wars on money balances and the British banking system. The terminology, however, is awkward, for it will surely become inconvenient soon, if it is not already, to use "normal" as descriptive of conditions prior to 1914. One unfortunate omission is any reference to the high marginal efficiency of capital among the reasons for the failure to maintain the Daltonian 2½% yield basis for gilt-edged. Indeed the version of Keynsian interest theory given here is incomplete because it fails to include the motives for borrowing money for real investment. The rates for lending on overdraft charged to-day by British banks are surely no longer "regulated by the Bank of England's official rate of discount on commercial bills" (p. 109).]

RICH (E. E.) (Ed.), assisted by JOHNSON (A. M.). James Isham's Observations on Hudson's Bay, 1743, and Notes and Observations on a Book entitled "A Voyage to Hudson's Bay in the Dobbs Galley," 1749. London: Champlain Society for the Hudson's Bay Record Society, 1949. 9½". Pp. xcix + 352 + x.

[This new volume in the Hudson Bay series is mainly filled by the observations of Hudson's Bay written by James Isham, who was at York Factory, with intervals, from 1732 to 1761.]

RÖPKE (W.). The Social Crisis of our Time. London: William Hodge, 1950. 8½". Pp. 260. 15*s.*

[To be reviewed.]

SAMUEL (F.). Economic Potential of Colonial Africa. London: United Africa Company, 1950. 9½". Pp. 19.

[An address by the Managing Director of the United Africa Company to the Royal Empire Summer School. He suggests that, if political developments move too far ahead of economic developments, there is a danger that the African peoples will find themselves in the end little, if any, better than the Kingdom of Ethiopia. Africa, for even a modest increase of income per head, needs great capital investment and great improvements in education and medical services. All three of these depend at present on substantial outside aid.]

The Scope Year Book of Industry, Trade and Finance, 1950. London: Scope Books, 1950. 8½". Pp. 645. 45*s.*

[This is a new year-book of industry, trade and finance. It is best described as half-way between *Whitaker's Almanack* and the *Statesman's Year-book* with a great deal of material that is not to be found in either. It begins with a review of 1949, first in general and then in terms of the principal industries. It then goes on to the commercial situation, at home and abroad, the commodity markets, the Stock Exchange, banking and credit, the budget controls, labour relations and so on. There follows a diary of the year with main events all chronicled. Next follow sections giving for all the main government departments, semi-public bodies, trade associations, trade unions, professional bodies and the like, lists of offices and names of service officials. There follows a section of useful data regarding foreign countries and international organisations. Finally, a statistical section carries the essential figures, first for the U.K. and then for foreign countries, of national income, population, production, finance, prices, trade and the balance of payments. The whole would seem to be done at a high level of economic competence and to make a really useful work of reference.]

Statistical Statements relating to the Co-operative Movement in India for the year 1947–48. Bombay: Reserve Bank of India, 1950. 13". Pp. 20. Rs. 2.

[The Working Capital for All-India in 1947–48 was Rs. 171 crores as compared with Rs. 156 crores a year earlier—Rs. 105 crores for the average of 1935–40.]

Steel: the post-war record. London: British Iron and Steel Federation, 1950. 10". Pp. 15.

[A popular account of the recent achievements of the British iron and steel industry. It contains a quantity of useful statistical material.]

THOMSON (D. F.). Economic Structure and the Ceremonial Exchange Cycle in Arnhem Land. Melbourne and London: Macmillan, 1949. 8½". Pp. 106. 12*s.* 6*d.*

[To be reviewed.]

Trustee Savings Banks Year Book. Fakenham: Wyman & Sons (for the Trustees Savings Banks Association), 1950. 7″. Pp. 155.

[A directory and who's who, with a statistical section showing deposits in each branch.]

TUCK (R. H.). Some Aspects of the Economic Structure of Dairy Farming in the Southern Region of the Milk Marketing Board. University of Reading: Department of Agricultural Economics, 1950. 8½″. Pp. 20. 2*s.* 6*d.*

[The author of this pilot study suggests that for the intelligent implementation and assessment of agricultural policy, two types of information are necessary: the relative importance and contributions to total output of different types of farms; the probable effects on these different types of changes in conditions, prices and other incentives. The study is primarily concerned to enlarge knowledge of the first kind in relation to milk production.]

United Kingdom Policy: Foreign, Strategic, Economic. London: Royal Institute of International Affairs, 1950. 7½″. Pp. 101. 4*s.*

[This consists of three papers prepared for the Commonwealth Relations Conference held at Bigwin Inn in Canada in September 1949. Sir Charles Webster writes on British Foreign Policy. Major-General Sir Ian Jacob deals with the United Kingdom's Strategic Interests. Prof. E. A. G. Robinson writes on the United Kingdom's Economic Problems. Prof. Robinson stresses the fact that the problems with which the United Kingdom now has to deal have emerged progressively over the past half century, and have been made more acute, but in no sense have been created, by the war.]

WHILLANS (G.). Whillans's Tax Tables, 1950–51. London: Butterworth, 1950. 9½″. 3*s.* 6*d.*

[A stiff cardboard sheet of tax rates since 1938–39, allowances, surtax rates, double taxation agreements, rates of estate duty and other useful information.]

WILLIAMS (GERTRUDE). Economics of Everyday Life. Harmondsworth: Penguin Books, 1950. 7″. Pp. 248. 1*s.* 6*d.*

[To be reviewed.]

WILSON (T.). Modern Capitalism and Economic Progress. London: Macmillan, 1950. 7½″. Pp. 274. 12*s.* 6*d.*

[To be reviewed.]

WOOD (A.). The Groundnut Affair. London: Bodley Head, 1950. 8″. Pp. 264. 12*s.* 6*d.*

[This is the book which provoked a political crisis. It is not difficult to see why. But it is difficult for anyone who was not in the thick of things to judge the rights and the wrongs. The book, apart from a wholly unnecessary preliminary excursus into Malthus, Marxism and Darwinism, is a business-like but vigorous and pointed account of events. It is not wholly unsympathetic to Mr. Strachey. Indeed, it becomes clear that the author's sympathies are with the Labour Party. It is highly critical of Plummer in certain respects. But the main impression it gives is of an heroic attempt to deal with the short-term problems of oil-shortage which acquired a momentum of its own and could never be reduced again to orderly progress.]

Your Future. What to be and How. Jersey: Rotary Club, 1950. 8½″. Pp. 41.

[A useful guide to possible occupations addressed to the boy or girl leaving school.]

YULE (G. UDNY) and KENDALL (M. G.). An Introduction to the Theory of Statistics, 14th edition. London: Charles Griffin, 1950. 9″. Pp. xxiv + 701. 34*s.*

[To be reviewed.]

American.

ADAMS (W.) (Ed.). The Structure of American Industry. Some case studies. New York and London: Macmillan Company, 1950. 8″. Pp. viii + 588. 36*s.*

[The editor of this book sets out to provide a series of industrial case studies for the illumination of American economic structure. Different writers describe and analyse some ten industries in addition to agriculture, shipping and air transport. These include cotton textiles, bituminous coal, steel, house-building, chemicals, cigarettes, films, milk, tin cans and glass containers. The authors are, or have been, teachers of economics. The approach is that of the economist and the treatment in each case independent and unbiased. Thus the book escapes that curious aroma of special-pleading by specialists from which many such books suffer. If there is a smell of monopoly, it is allowed to reach our nostrils. We hear about price-leadership and anti-trust cases, and the structure of the industry is discussed from the angle of public interest. Finally, Prof. Corwin Edwards of the Bureau of Industrial Research of the Federal Trade Commission writes on Public Policy in a Free Enterprise Economy and Prof. Illingsworth on Organised Labour. A valuable book which might have uses as a text-book.]

ARAKELIAN (A.). Industrial Management in the USSR. Translated by E. L. Raymond. Washington D.C.: Public Affairs Press, 1950. 9″. Pp. 168. $3.00.

[To be reviewed.]

BESTOR (A. E.). Backwoods Utopias. The sectarian and Owenite phases of communitarian socialism in America 1663–1829. Philadelphia: University of Pennsylvania Press (London: Geoffrey Cumberlege), 1950. 9″. Pp. 288. 28*s.*

[To be reviewed.]

BRADSHAW (T. F.). Developing Men for Controllership. Boston: Graduate School of Business Administration, Harvard University, 1950. 8″. Pp. x + 231. $3.25.

[To be reviewed.]

BROWN (W. A.). The United States and the Restoration of World Trade. An analysis and appraisal of the ITO Charter and the General Agreement on Tariffs and Trade. Washington D.C.: Brookings Institution, 1950. 9″. Pp. xiii + 572.

[To be reviewed.]

CHANG (PEI-KANG). Agriculture and Industrialization. Harvard Economic Studies, Vol. LXXXV. Cambridge, Mass.: Harvard University Press (London: Geoffrey Cumberlege), 1949. 8½″. Pp. xii + 270. 27*s.* 6*d.*

[The author of this book makes an attempt to survey the whole vast field of the relationships between the industrial and agricultural sectors of an economy in the process of industrialisation, with special reference to the problems of his native China. The general structure of the work is that first some of the theoretical problems are explored, then historical experience is drawn on to illustrate the sort of changes that have taken place in the past—the rate of growth of industrial production at various times in a number of countries such as the U.K., the U.S. and Japan for instance—and finally some of the more specific problems of industrialisation of a country like China are considered. Although the historical sections are particularly interesting, there seem to be too many omissions (*e.g.*, no distinction between countries with rapidly increasing pressure of population on the available supply of land and those with vast undeveloped areas and no discussion of the crucial question of the rate of voluntary saving) to justify his claim to be comprehensive. The tendency to drag in every possible theoretical concept, of however little relevance, also impairs the general treatment of his subject. The rough tools of Adam Smith might have been found to have a keener cutting edge than these "endless fantastic patterns of tangencies and intersections," as Professor Robertson has recently called them.]

Cole (A. H.). The Great Mirror of Folly (Het grooet tafereel der Dwaasheid). An Economic–Bibliographical Study. Boston, Mass.: Harvard Graduate School of Business Administration, 1949. 10½″. Pp. 40.

[The *Tafereel* is made up of satirical plates, together with the charters of important companies floated in various Dutch cities during the period of bubble fever associated in England with the South Sea Bubble and in France with the Mississippi Bubble. The identity of the compiler and the places of publication are unknown. The volume evolved from time to time, and no two known copies are absolutely identical. Prof. Cole is primarily concerned with the bibliographical mysteries, but he suggests that the existence of this volume, and its continual reappearance in each speculative crisis, may have contributed to the long delay in the evolution of the corporation in the Netherlands.]

Corrigan (J. L.). Management and Management's Rights to Manage in Industrial Relations, a Study in Differences. Washington D.C.: Catholic University of America Press, 1950. 9″. Pp. x + 233.

[A Ph.D. Thesis of the Catholic University of America.]

Daugherty (C. R.) and (Marion R.). Edited by E. S. Furniss. Principles of Political Economy. 2 vols. Chicago: Mifflin Company, 1950. 9½″. Pp. xv + 1125 + xi.

[To be reviewed.]

Derber (M.) (Ed.). Industrial Relations Research Association. Proceedings of the Second Annual Meeting. Champaign, Illinois: Industrial Relations Research Association, 1950. 9″. Pp. 299.

[This contains the papers read to the Second Annual Meeting of the Association held in December 1949, under the Presidency of Dr. Sumner Slichter. They fall into five main groups: (1) Labour and the Public Interest. (2) Can Capitalism dispense with Free Labour Markets? (3) Crucial Issues in the Pension Problem. (4) Economic Power Blocs and American Capitalism. (5) Measurement of Employee Attitudes.]

Dickinson (F. G.) and Welker (E. L.). Infant Deaths and Stillbirths in Leading Nations. Chicago: American Medical Association, 1950. 11½″. Pp. 17.

[A detailed analysis of the causes of infant mortality both for the individual States of the U.S.A. and for other countries, where comparable figures can be obtained.]

Duesenberry (J. S.). Income Saving, and the Theory of Consumer Behavior. Cambridge, Mass.: Harvard University Press (London: Geoffrey Cumberlege), 1950. 8½″. Pp. 128. 16*s*.

[To be reviewed.]

Everest (A. S.). Morgenthau, the New Deal and Silver. New York: Columbia University, King's Crown Press (London: Geoffrey Cumberlege), 1950. 8½″. Pp. viii + 209. 22*s*. 6*d*.

[This book is best described as a case study of pressure groups in Congress. The policies designed to appease these groups at home caused chaos abroad, and the author is led to study, first (with the help of Henry Morgenthau's papers) the attempts of the U.S. Treasury to steer a middle course, and secondly, the repercussions on Latin America, China, India and the measures by which the U.S. tried to mitigate these, and finally the war-time consequences.]

Grant (M.). Aspects of the Principate of Tiberius. New York: American Numismatic Society, 1950. 9″. Pp. xviii + 199. $5.00.

[This is best described as a volume of historical comment on the colonial coinage issued outside Spain. The coinages of Western Europe, Africa, Macedonia, Epirus and Achaia and the Eastern Provinces are described in turn, and the character, occasions of issue and the extent of the coinage is analysed. The book is replete with all the meticulous scholarship and accurate learning that one associates with the work of Prof. Grant.]

HARTLAND (PENELOPE C.). Balance of Interregional Payments of New England. Providence, Rhode Island: Brown University, 1950. 11″. Pp. 125.

[This roneoed document represents a most interesting attempt to estimate the balance of payments between New England and the rest of the world, including the rest of the United States. The trade figures were based on commodity movements across the boundaries of New England by rail, water and truck. As the result of the activities of the Interstate Commerce Commission far more data exist of railway movements than would be available for any comparable region of this country. Road movements had to be estimated from traffic censuses and the sample of inquiries made in connection with it into the type, source and destination of loads. Attempts are also made to calculate the invisibles, including New England's large export of education and recreation. Data are also available for interest and dividends on a "where received" basis, and a comparison of these with the payments made for use of capital, as shown in tax returns, enables the net inflow from outside to be estimated. This pioneer work is of great interest for anyone who may be attempting similar work elsewhere.]

HAZLITT (H.). Illusions of Point Four. Irvington-on-Hudson, New York: Foundation for Economic Education, 1950. 7½″. Pp. 48. 50 cents.

[The main argument of this political pamphlet is that any international capital movements achieved through Point Four are merely diversions from private to public channels, and that such diversions are likely to mean that a fixed stock of capital is used in less-desirable ways. "It cannot be doubted that the potential private funds for foreign investment exist in ample amount there. It is merely necessary for would-be borrowers abroad to make their policies and their political and economic climate sufficiently attractive to our private investors."]

HOFFSOMMER (H.) (Ed.). The Social and Economic Significance of Land Tenure in the Southwestern States. A report of the Regional Tenure Research Project. North Carolina University Press (London: Geoffrey Cumberlege), 1950. 9″. Pp. ix + 666. 48*s.*

[This is a large and comprehensive study, by the expert personnel of the State Agricultural Colleges of Arkansas, Louisiana, Texas, Oklahoma and Mississippi. The problems it handles are those of the relation of land tenure to farm organisation and particularly to the performance of farm families. Such issues as size of farm, crop organisation, capital investment, livestock on the farm, farm equipment, farm income are each in turn analysed and related, so far as possible, to the types of tenure. At the same time the reasons for different types of tenure are carefully examined. Many ready-made and easily accepted judgments are proved to be untenable, and the causes of success or failure are found to be ascribable to many other factors besides the forms of land tenture.]

HUBBARD (J. C.). Creation of Income by Taxation. Cambridge, Mass.: Harvard University Press (London: Geoffrey Cumberlege), 1950. 8½″. Pp. xi + 239. 25*s.*

[To be reviewed.]

HURFF (G. B.). Social Aspects of Enterprise in the Large Corporation. Philadelphia: University of Pennsylvania Press, 1950. 8½″. Pp. 137. $2.00.

[To be reviewed.]

Investment for Jobs. Washington, D.C.: Chamber of Commerce of the United States, 1950. 7½″. Pp. 36. 25 cents.

[This pamphlet asks the question "What investment is necessary to provide for the growth of U.S. population and employment if everyone is to get a job?" At current replacement cost, capital per head in manufacturing is estimated at $10,000 per job; in public utilities the figure is much higher. The annual net increase in the labour force is about 600,000. Thus the investment to maintain the existing capital per head is about $6 billion. In addition, nearly 1 million workers are released annually for new employment by technical progress. There are also declining industries. Clearly something like $15–20 billion a year of new investment is required. The pamphlet argues that tax reductions and adjustments are necessary to secure this.]

Keezer (D. M.) and Associates. Making Capitalism Work. A program for preserving freedom and stabilizing prosperity. New York and London: McGraw-Hill, 1950. 8″. Pp. ix + 316. 30*s*.

[To be reviewed.]

Kimmel (L. H.). Taxes and Economic Incentives. Washington, D.C.: Brookings Institution, 1950. 9″. Pp. x + 217. $2.50.

[To be reviewed.]

Kress Library of Business and Economics, 1938–1949. Boston, Mass.: Harvard Graduate School of Business Administration, 1950. 9″. Pp. 8.

[An annual report by Dr. A. H. Cole on the activities of the Kress Library and some of the acquisitions to its collections.]

Lee (M. W.). Tax Structure of the State of Washington. Pullman, Washington: State College of Washington Press, 1950. 9″. Pp. viii + 134. Paper 50 cents. Cloth $2.50.

[The purpose of this survey is an objective analysis of the tax structure of the State, to enable revenue to be increased equitably and with least burden. Each of the main sources of revenue is considered in turn, and the burden in the State of Washington is compared with that in other States. The State of Washington is shown to be more dependent than any other State on its sales tax, which is in the nature of things regressive in its incidence.]

Lutz (F. A.) and (**Vera** C.). Monetary and Foreign Exchange Policy in Italy. Princeton University Press (for International Finance Section) (London: Geoffrey Cumberlege), 1950. 9″. Pp. 46. 6*s*. 6*d*.

[This interesting short study of Italian financial and economic policy over the past few years deals with a number of controversial points that have greatly interested economists. The authors defend the official deflationary policy against its critics. They hold that unemployment is principally due to long-term structural forces—and particularly to population growth uncompensated by emigration. The root cause, they argue, is that Italian labour will not accept employment at the real wages which employment with the present capital stock would yield; that only increased investment and capital stock will increase real incomes; that in Italy, inured to inflation, the net volume of savings is decreased and not increased by inflation, owing to flights into commodities; that in consequence forced saving is impracticable and voluntary saving, through confidence in the currency—which meant stability of the dollar exchange—was the right and only sensible objective, even if it meant some structural unemployment while voluntary saving and a willingness to invest in the right ways was being re-created. The authors also have interesting comments to make on the equally controversial sterling cross-rate issue.]

Mace (M. L.). The Growth and Development of Executives. Boston: Graduate School of Business Administration, Harvard University, 1950. 8″. Pp. x + 200. $3.25.

[To be reviewed.]

Motten (C. G.). Mexican Silver and the Enlightenment. Philadelphia: University of Pennsylvania Press (London: Geoffrey Cumberlege), 1950. 9″. Pp. 90. 16*s*.

[This monograph is concerned with the successes, failures and lessons learned by a mission of European scientists and mining technicians sent in 1778 to study the methods of mining silver, in order to increase production, since Spain depended on it for much of its revenue. As a background the author gives an account of native mining before the Conquest and describes mining and science in Mexico in the seventeenth and eighteenth centuries.]

PERLOFF (H. S.). Puerto Rico's Economic Future. University of Chicago Press (London: Cambridge University Press), 1950. 9½″. Pp. xviii + 435 and illustrations. 36*s*.

[This large and very thorough study of the economy of Puerto Rico has been made under the auspices of the Social Science Centre of the University of Puerto Rico. Prof. Perloff starts with a brief historical background and then proceeds to a very thorough and detailed analysis of resources, structure, the dominant rôle of sugar, agricultural and manufacturing trends, the economic ties with the U.S.A., foreign trade, patterns of employment and wages and of incomes and expenditures. Next follows a section on the acute population problems. Finally, he tackles the problem of planned economic development, with special reference to agricultural adjustments and industrial expansion.]

Quaker Work among Arab Refugees undertaken for the United Nations. Philadelphia: American Friends Service Committee, 1950. 8½. Pp. 32.

[A short account of the distribution of relief among Arab refugees in the Gaza strip.]

SCHULTZ (T. W.). Production and Welfare of Agriculture. New York and London: Macmillan, 1950. 8″. Pp. xi + 225.

[To be reviewed.]

SCOVILLE (W. C.). Capitalism and French Glassmaking, 1640–1789. Berkeley and Los Angeles: University of California Press (Cambridge University Press), 1950. 10″. Pp. vii + 210. 18*s*. 9*d*.

[To be reviewed.]

Steadier Jobs. An action program for management. Washington D.C.: Chamber of Commerce of the United States, 1950. 9″. Pp. 18. 25 cents.

[After briefly arguing the case for eliminating seasonal unemployment and slack periods, wherever this is practicable, the pamphlet goes on to set out under various heads—marketing and sales, production, personnel policies—the means by which seasonal fluctuations can be diminished.]

SWANN (NANCY LEE) (Translated and annotated by). Food and Money in Ancient China. (Han Shu 24). Princeton University Press (Oxford University Press), 1950. 9½″. Pp. xiii + 482. 63*s*.

[To be reviewed.]

WENDZEL (J. T.). Perspective for Business Expansion. A memorandum to Kalamazoo Businessmen. Kalamazoo, Michigan: W. E. Upjohn Institute for Community Research, 1949. 9″. Pp. 16.

[This represents an attempt by one firm to foresee the characteristics of the world for which it must now plan its own production and extensions of capacity. The results are published for the benefit of others. On the basis of known population growth and reasonable assumptions (granted continued high levels of employment) about persons occupied and output per head, the total U.S. national income of 1970 may be more than 70% greater than that of 1948 at similar prices, and income per head some 40% greater. If an economist is to comment, he would probably say that these estimates are as good as can be made if what one is concerned with is full-employment income and expenditure. It would be easy, however, to visualise a world in which full employment did not exist, in which, through lower investment, the gradient of progress was much less, and the profitability of marginal investment made on the basis of these estimates in serious doubt.]

WOODWORTH (G. W.). The Monetary and Banking System. New York and London: McGraw-Hill, 1950. 9″. Pp. xiv + 588. 42*s*. 6*d*.

[A thoroughly useful university text-book on the massive scale but at a fairly elementary level. It covers the whole field, including the functions of money, monetary systems and standards, the origins and the history of banking, the financial developments of this century, the Federal Reserve system, bank notes and deposits, clearings, the problems of liquidity, banking advances and investment, the determination of the price level, the velocity of circulation, long-term price-trends, the business cycle and theories of production and employment, foreign exchanges, the money market, international finance, fiscal policy and monetary management. It is essentially an American book, dealing with American conditions; while it has great virtues for its own purpose, and is well worth study for the way it presents problems, it is perhaps too perfectly American to make a good English text.]

French.

Bettelheim (Ch.). L'Économie Soviétique. Paris: Recueil Sirey, 1950. 10″. Pp. 472. 1,600 fr.

[To be reviewed.]

Institut National de la Statistique et des Études Économiques. L'Asie Soviétique. Paris: Presses Universitaires de France, 1949. 9½″. Pp. 232.

[To be reviewed.]

Leger (C.). La Démocratie industrielle et les comités d'entreprise en Suède. Paris: Armand Colin, 1950. 9″. Pp. 227. 350 fr.

[To be reviewed.]

Marantz (M.). Le Plan Marshall, Succès ou Faillite? Paris: Marcel Rivière, 1950. 9″. Pp. 268. 320 fr.

[To be reviewed.]

Belgian.

Jacquemyns (G.). Les Radiesthésistes devant l'Opinion Publique. Brussels: Institut Universitaire d'Information Sociale et Economique, 1950. 9″. Pp. 55.

[A sample investigation designed to discover how far the public believes in and resorts to witch-doctors of one kind or another for such purposes as water divination, the prediction of the sex of an unborn child, to get in touch with the dead, to discover the nature of a disease. Nearly half the sample population believed that certain people can divine water. About a quarter believed in extraordinary powers to discover diseases. Only 10–15% believed in the other abnormal powers.]

German.

Binder (R.). Die Belastung durch die persönliche Einkommensteuer in Deutschland, England und den Vereinigten Staaten. Kiel: Institut für Weltwirtschaft, 1950. 8″. Pp. vii + 196. DM. 15.

[To be reviewed.]

Dörpmund (H.). Die Mittel der Industriestandortlenkung und die Grenzen ihrer Anwendbarkeit. Bremen-Horn: Walter Dorn, 1950. 8″. Pp. 127. DM 4.

[To be reviewed.]

Lebensfähigkeit und Vollbeschäftigung. Kiel: Institut für Weltwirtschaft, 1950. 11½″. Pp. 55.

[To be reviewed.]

Plate (R.). Der Weltgetreidemarkt nach dem zweiten Weltkrieg. Berlin: Paul Parey, 1950. 8″. Pp. 233.

[To be reviewed.]

STISSER (R.). Standort und Planung der deutschen Kraftfahrzeugindustrie. Bremen-Horn: Walter Dorn, 1950. 8″. Pp. 84.

[To be reviewed.]

WEBER (A.). Hauptfragen der Wirtschaftspolitik. Berlin: Duncker & Humblot, 1950. 9″. Pp. x + 374. DM 15.

[To be reviewed.]

Italian.

FOSSATI (E.). Ricerche sui contributi inglesi alla teoria della moneta. Vol. I. Florence: Case Editrice del Dott. Carlo Cya, 1940. 10″. Pp. 263. 30 l.

[To be reviewed.]

GAMBINO (A.). Problemi della politica creditizia. Milan: Università Commerciale Luigi Bocconi, 1948. Pp. 155. 700 l.

[This volume consists of reprints, without alteration, of articles contributed to the *Giornale degli Economisti* by Prof. Gambino between August 1935 and April 1948. It is somewhat misleadingly entitled *Problems of Credit Policy*, since it is primarily concerned with broad theoretical issues, such as the sense, if any, in which it can be held that banks can create credit; the relation between bank credit and capital formation, and between saving and consumption, and similar questions. Prof. Gambino writes well and sensibly, taking a balanced position between the views of the opposing schools of thought on these matters. Like many other continental economists he devotes a considerable amount of space to the pioneer work of Böhm Bawerk on the theory of capital, and his comments on this are interesting and suggestive. It may be doubted, however, whether he was well-advised simply to reprint his articles in their original form. Criticisms written in August 1936 of what he then described as the Cambridge school of thought of Robertson and Keynes, and stimulated by the appearance of Keynes's *General Theory of Employment Interest and Money*, can hardly to-day be of much more than purely historical interest.]

SARACENO (P.). L'Azienda industriale. Milan: Vita e Pensiero, 1950. 9½″. Pp. 298. 1300 l.

[To be reviewed.]

Norwegian.

OUREN (T.) and SØMME (A.). Trends in Inter-War Trade and Shipping. Bergen: J. W. Eides Forlag, 1948. 11″. Pp. viii + 72. Kr. 15.

[An account of the trends of trade in the different continents and on the different oceans.]

Swedish.

Eli F. Heckschers bibliografi, 1897–1949. Stockholm: Ekonomisk-Historiska Institutet, 1950. 9″. Pp. 122.

[A list of Prof. Heckscher's writings, set out alphabetically under the various years in which the work appeared.]

Swiss.

PANKOW (G.). Grundlagen einer internationalen Wirtschaftsordnung. Zurich: Leeman, 1950. 9″. Pp. 72. S. fr. 3.

[To be reviewed.]

South American.

BARUCH (J.). El Acreditivo Documentado. Buenos Aires: Instituto de Economía Bancaria, 1949. 10″. Pp. 262.

[This study of documentary credits considered from the economic rather than the legal aspect was prepared as a doctoral thesis for the Faculty of Economics of the University of Buenos Aires.]

Czechoslovakian.

Work for all or Unemployment. Prague: Orbis, 1950. 8″. Pp. 126.

[This pamphlet sets out to contrast unemployment in capitalist countries (though it concedes that in Great Britain it is a threat rather than a reality) with "the liquidation of unemployment by peaceful methods" in the U.S.S.R. and the satellite countries.]

Egyptian.

CHALOM (G.). La Détermination Fiscale des Bénéfices Commerciaux et Industriels en Égypte et les Recours Contentieux. Cairo: S.O.P. Press, 1949. 10″. Pp. 165. P.T. 40.

[To be reviewed.]

Official.

BRITISH.

DIRECTORATE OF INDUSTRIAL STATISTICS. First Census of Manufactures, India, 1946. 2 vols. Government of India: Ministry of Industry and Supply, 1949. 9½″. Pp. 637.

[This is the first Census of Manufactures that India has attempted. It clearly represents a triumph over great difficulties. A large number of undertakings made no returns, or found themselves in great difficulties over them. The political troubles before and after partition supervened. It is hoped that the experience of this occasion will make subsequent censuses more complete and satisfactory. For cotton textiles about 88% of factories made analysable returns; for woollen textiles the figure was under 70%; for tanning it was under 60%; for all industries about 80% of returns were obtained. This was despite the setting of a lower limit of firms employing twenty workers in a manufacturing process using power. The report suggests, however, that most of the failures were small firms which contribute little to total output and that the coverage is much more than would appear from the percentage of returns. As well as the usual figures of gross and net output, numbers of employees, totals of wages and other costs, returns were obtained of fixed and working capital employed and of depreciation of rates allowed for tax.]

Monthly Statistics of the Production of Selected Industries of India. Delhi: Manager of Publications, 1950. 9½″. Pp. 10.

[A new series of monthly output figures giving production in physical units, in relation to 1946 and in relation to installed capacity.]

NATARAJAN (B.). An Essay on National Income and Expenditure in India. Madras: Economic Adviser to the Government of Madras, 1949. 8½″. Pp. xiv + 102. Rs. 3.

[This is a brave, but somewhat crude, attempt to bring up-to-date the estimates of the Indian national income in advance of more careful and detailed work which is only now starting. The author takes Prof. Rao's estimates for 1931–32 as a point of departure and corrects for changes in volume of production and changes in price. On the basis of cultivated area, occupied population, crop yields and livestock population he distributes the totals under agriculture, industry and services between provinces and gets a provincial income. The broad result is an estimate that while the national income in money terms has risen nearly four times, in real terms it has risen less than 1·5% and that income per head is 10% lower than in 1938–39.]

Papers of the Royal Commission on Population. Vol. II. Reports and Selected Papers of the Statistics Committee. London: H.M. Stationery Office, 1950. 9½″. Pp. 422. 8*s*.

[To be reviewed.]

Papers of the Royal Commission on Population. Vol. V. Memoranda presented to the Royal Commission. London: H.M. Stationery Office, 1950. 9½″. Pp. iv + 120. 3*s*.

[To be reviewed.]

Second Year of Freedom, August 1948–August 1949. New Delhi: Publications Department, A.I.C.C., 1950. 9½″. Pp. 128. Rs. 3-8-0.

[A survey, by the Indian National Congress organisation, of the achievements of India during the second year of independence. The developments which are particularly stressed are the decline of communal tensions and the integration of the States into unions. On the other hand, the emergence of a major problem of the balance of payments is frankly admitted and its serious nature not underrated. Chapters in the survey deal, amongst other things, with certain budgetary problems, relief and rehabilitation, food and agriculture, the zamindari problem, rural development, transport, industrialisation and labour conditions. Most urgent of all economic problems is to ensure sufficient food supplies for the growing population, consistently with a balancing of payments.]

BELGIAN.

Inter-Allied Reparation Agency. Report of the Secretary General for the year 1949. Brussels: Inter-Allied Reparation Agency, 1950. 9½″. Pp. 111.

[This gives a very full history of German reparations, so far as they concern the Western Zones. By the end of its activities the Reparation Agency will probably have distributed a little over $500 million (in 1938 dollars)—a tiny fraction of the $20 billion about which the Russians talked at Yalta. Of that total nearly $300 million represents the external assets of Germany and a little under $50 million comes from Germany's merchant shipping. Under $150 million is represented by industrial capital. Of the $413 million distributed to the end of 1949, the United Kingdom had received about $84 million—equivalent to about two days of the cost of the war to her.]

DUTCH.

LISMAN (J. H. C.). Econometrics, Statistics and Thermodynamics. The Hague: Netherlands Postal and Telecommunications Services, 1949. 9½″. Pp. 104.

[To be reviewed.]

SWISS.

Bank for International Settlements. Twentieth Annual Report. Basle: Bank for International Settlements, 1950. 12″. Pp. 310.

[To be reviewed.]

CZECH.

DOLANSKY (J.). Three Years of Planning in the Czechoslovak People's Democracy. Translated by F. O. Stein. Prague: Ministry of Information and Public Culture, 1949. 8″. Pp. 60.

[The Report of the Minister-Chairman of the Czech State Planning Office on the fulfilment during the first half of 1949 of the official two-year and five-year plans. Nationalised undertakings now cover 97% of industrial production and 78% of retail trade. Industrial output is estimated to be over 35% above the pre-war level, and agricultural output is about equal to the pre-war level. Foreign trade is said to be four times that of 1946, with the U.S.S.R. taking a 40% share.]

New Family Legislation in Czechoslovakia. Prague: Ministry of Information and Public Culture, 1950. 8″. Pp. 45.

[The text of an act covering all aspects of the marriage contract, rights and duties of spouses, divorce and parental responsibilities. It is prefaced by an address to the National Assembly by the Minister of Justice setting out its objectives, and the economic and social background of it.]

INTERNATIONAL.

Draft International Agreement on Tin. March 1950. The Hague: International Tin Study Group, 1950. 11″. Pp. 21.

[A draft agreement of which the objectives are: to prevent unemployment due to failure of market forces to balance production and consumption; to prevent excessive price fluctuations; to ensure adequate supplies; to promote consumption, or failing that to adjust capacity and shift resources out of the industry; to maintain and develop natural resources of tin.]

A Statement on the Position and Prospects of the Tin Industry. The Hague: International Tin Study Group, 1950. 11½″. Pp. 58. 7*s*. 6*d*.

[This report by the International Tin Study Group draws attention to the increasing emergence of a surplus of tin. World production is near to 170,000 tons a year; world consumption is about 120,000 tons a year. If there is strategic stock-piling the problems may be solved. But because of uncertainty, there has been no confidence in the market and danger of collapse in certain areas.]

INTERNATIONAL LABOUR OFFICE.

Action against Unemployment. Geneva: International Labour Office (London: Staples Press), 1950. 9½″. Pp. 260. 9*s*.

[This large-scale survey of measures to prevent the emergence of unemployment in the main follows familiar lines. An introductory section deals with the unemployment situation in the four countries which at the time of writing seemed to be the possible focal points of unemployment: Belgium, Germany, Italy and the U.S.A.]

UNITED NATIONS.

Catalogue of Economic and Social Projects, 1950. Lake Success: United Nations (London: H.M. Stationery Office), 1950. 9″. Pp. xx + 515. 27*s*. 6*d*.

[A list of the projects which are proceeding and the studies that are being made by each of the main sections of the United Nations organisation and by its Special Agencies. Under each entry is given a brief account of the purpose of the inquiry and the methods adopted.]

The Economic Development of Latin America and its principal problems. Lake Success: United Nations (London: H.M. Stationery Office), 1950. 9″. Pp. 59. 3*s*.

[This very interesting study of the Economic development of Latin America is the work of Prof. Raul Prebisch. It deals, largely on an analytical rather than a purely statistical basis, with the problems of the terms of trade and the division of the advantages of technical progress between primary producers and manufacturers; the effects on Latin America of high productivity in the United States; the problem of dollar shortage and its repercussions on Latin America; capital formation and the inflationary process; the levels of industrialisation; the basis of an anti-cyclical policy for Latin America.]

Economic Development in Selected Countries. Plans, programmes and agencies. Vol. II. Lake Success: United Nations (London: H.M. Stationery Office), 1950. 9″. Pp. xiii + 271. 15*s*.

[This volume covers developments in Australia, Bulgaria, Colombia, New Zealand, the Philippines, Puerto Rico, Southern Rhodesia and the Union of South Africa. The quality of the material differs somewhat from country to country, but is in the main concerned with organisation and administrative machinery and there is little attempt to assess realistically the actual progress being made.]

Economic Survey of Europe in 1949. Prepared by the Research and Planning Division, Economic Commission for Europe. Geneva: United Nations (London: H.M. Stationery Office), 1950. 11″. Pp. xv + 297. 15*s*.

[To be reviewed.]

European Engineering Industry. Availability of Products for Export. Geneva: United Nations, Economic Commission for Europe, 1950. 11″.

[A roneoed analysis of delivery dates of engineering products from different European countries. It adds less than might be expected to knowledge. The three categories—under three months, three to six months, considerable delay—are necessarily crude. Most countries are in the same category for any product, and slow deliveries are those which are well-known to most observers. But there are now many types of capital goods of which delivery is said to be reasonably short.]

Liberating World Trade. Second report on the operation of the general agreement on tariffs and trade. United Nations: Interim Commission for the International Trade Organization, 1950. 9½″. Pp. 29. 1*s*. 9*d*.

[This pamphlet, prepared by the Secretariat of the Interim Commission of the International Trade Organisation, describes the progress made in tariff reduction and the further negotiations that will take place at Torquay, beginning in September 1950. Great emphasis is placed on the renewal of quantitative restrictions, and in a concluding paragraph it is argued that, when they can be relaxed, more will be lost "by an excessive timidity in scrapping controls than by a policy of calculated boldness in measures of liberation."]

National Income Statistics of Various Countries, 1938–1948. Lake Success: Statistical Office of the United Nations (London: H.M. Stationery Office), 1950. 11″. Pp. 249. 17*s*. 6*d*.

[This very useful new book of reference presents the national income statistics of thirty-two countries with sufficient notes and comments to make it possible to judge when like is being compared with like. It is prefaced by an introduction which discusses in considerable detail the conceptual and other problems involved. A chapter adjusts the published figures for each country, so far as practicable, on to an internationally comparable basis.]

Non-self-governing Territories. Summaries and analyses of information transmitted to the Secretary-General during 1949. Vol. I. Lake Success: United Nations (London: H.M. Stationery Office), 1950. 9″. Pp. 254. 15*s*.

[This volume contains a general survey, with comparative figures for different territories, of the progress of Colonial and other non-self-governing territories. Progress has on the whole been considerable, but in a number of cases earlier estimates have proved optimistic and large investment has proved to be necessary in basic services, health and education, transport, irrigation and water supply, and research. The report quotes with approval a sentence from the U.K. submission to O.E.E.C., which in referring to estimates of the possible increases of imports from dependent Overseas Territories stated that "It would be inconsistent with Trusteeship, and would, moreover, be economically impracticable, to subordinate progress in those fields fundamental to the healthy development of the native communities to a breakneck increase in food and raw-material production wholly designed for export."]

5 FEB 1951

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THE SUBSTITUTION EFFECT IN VALUE THEORY

The Slutsky–Hicks theory of value is based on a fundamental equation which divides the effect of any price change on demand into two parts—that due to change in real income (the income effect) and that due to change in relative prices with real income constant (the substitution effect). The theory is expressed mathematically in terms of derivatives, *i.e.*, rates or directions of change.[1] Most economists, however, cannot operate at all easily in these terms. In expounding and applying the theory, they throw it into diagrammatic form, in two (or perhaps in three) dimensions, and allow the hypothetical consumer to jump from one situation to another, as represented by two distinct points on the diagram. Hicks himself does this in the text of *Value and Capital*, confining the mathematical exposition to an Appendix. As Mosak has pointed out, Hicks gets into difficulties in two ways.[2] There is first a difference according as the income effect is taken first and then the substitution effect, or conversely (cf. Mosak's Figs. 1 and 2), and secondly, a difference according to the specific interpretation given to the substitution effect (cf. Mosak's Figs. 2 and 3). These difficulties arise solely because of the attempt to translate the fundamental equation into diagrammatic terms with finite changes in prices and income.

While Hicks was developing his theory, Samuelson was making progress on another tack.[3] He is quite prepared, indeed anxious, to found the theory of value on finite changes by modifying and extending the Slutsky–Hicks fundamental equation. He also wishes to divorce the theory from any initial assumption of a scale of preferences or an (ordinal) utility function. Consequently, his diagrammatic representation includes no familiar indifference contours and his development is not easily appreciated by those accustomed to think in terms of indifference maps.

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[1] Hicks, *Value and Capital*, 2nd edition, Mathematical Appendix, pp. 305–14.

[2] Mosak, "On the Interpretation of the Fundamental Equation of Value Theory," in *Studies in Mathematical Economics and Econometrics* (ed. Lange, McIntyre and Yntema).

[3] Samuelson, "The Problem of Integrability in Utility Theory," *Economica*, November 1950, and the earlier references there quoted.

If the theory of value is not to fall again into a state of confusion, it is time we resolved these difficulties and differences.[1] The following development is an attempt at consolidation. It starts by recognising the facts that economists think in terms of finite changes in prices, income and other variables and that they prefer to have diagrammatic representations in two dimensions, bringing in later the complications of more than two dimensions. It leaves it open at first whether to assume, for purposes of exposition, the existence of an indifference map, and it brings out later the relevance of the map.

II

The basic construction in two dimensions is shown in Fig. 1. There are two commodities X and Y, of which Y can be taken as *numeraire*. The price of X in terms of Y is denoted by p and income (again in terms of Y) by M. For an individual consumer, the income effect is easily represented. Fix p and let M increase; then the demands for X and Y will vary along some curve in the (XY) plane. There is one such curve, called by Hicks the "income-consumption curve," for each price p fixed, and Fig. 1 shows three curves corresponding to prices p_1, p_2, p_3 $(p_1 < p_2 < p_3)$. The curves will generally proceed in the N.E. direction, X and Y

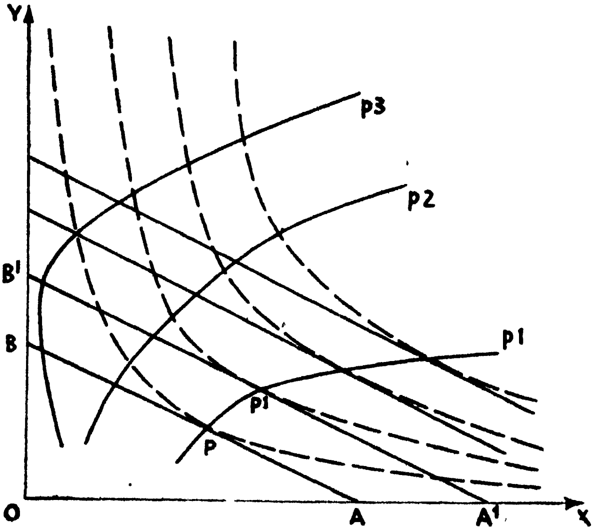

FIG. 1.

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[1] They appear also in the theory of production, cf. Makower and Baumol, "The Analogy between Producer and Consumer Equilibrium Analysis," *Economica*, February 1950.

both increasing with M, as shown for the curves p_1 and p_2 in Fig. 1. It is possible, however, that some of the curves may take the form shown by p_3 in Fig. 1, in which case X is an inferior commodity, and X will decrease while Y increases with M, at low income levels. In Samuelson's terms, a higher point (corresponding to a higher income) on an income–consumption curve is revealed to be preferable to a lower point on the same curve. The consumer is " better off " with the higher income; he could, if he desired, continue to buy the combination of commodities bought at the lower income. There is nothing more which can be said about the income effect. The income–consumption curves are (ideally) observable phenomena, and simply express the demand reactions of the consumer to changing income, price fixed.[1]

The diagrammatic interpretation of p and M is by means of a " price line " AB (Fig. 1). Given p and M, the consumer can acquire only those combinations of X and Y shown by points on AB, where OB is M and OA is $\frac{M}{p}$. The (negative) slope of the line AB is p. If p is fixed (say p_1) and M increases, then the line AB of slope p_1 moves parallel to itself in the N.E. direction. Each point P, P^1, . . . on the p_1 income–consumption curve lies on one of these parallel lines. What can be said about these points? Following Samuelson, we can say simply that P is revealed to be preferable to all other combinations on AB (which can be bought with the same income at the given price). If we assume an (ordinal) preference scale for the consumer, then we can insert a set of indifference curves, shown as broken curves in Fig. 1. The point P can then be interpreted as the point where the given line AB touches an indifference curve, *i.e.*, the income–consumption curve is the locus of points where the price line, moving parallel to itself, touches indifference curves. This does not add anything, except perhaps for purposes of exposition.

It should be noted that there is no difficulty in handling finite changes in income. As income increases from M $(= OB)$, the direction of change of demand is along the income–consumption curve from P. If income increases from M $(= OB)$ to M^1 $(= OB^1)$, then demand changes from that at P to that at P^1. It is immaterial whether we hop direct from P to P^1 or move " continuously " along the curve between these points. Further, there are no difficulties about extending into three (or more) dimensions. There are now three commodities, and the parameters are two (relative) prices and income. The income–consumption curves become curves in three dimensions, while the price lines are replaced by price planes. Each of the points P, P^1, . . . on an income–consumption curve is revealed to be preferable to all other points on the appropriate price plane. If we assume an (ordinal) preference scale and integrability, then P, P^1, . . . are points where a parallel set of price planes touch the indifference surfaces. But, again, there is nothing much to be gained from the extra assumption at this stage.

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[1] What is required of consumer's demand is that the demand for each commodity is a single-valued, continuous function of prices and income, which can be inverted to give prices and income each as a single-valued, continuous function of the demands. This ensures a set of non-intersecting income–consumption curves of the form illustrated.

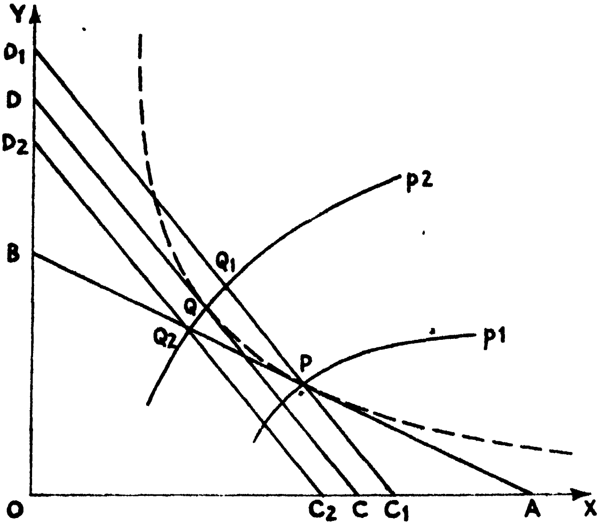

FIG. 2.

The difficulties arise at the next stage, in the attempt to define and interpret the substitution effect. Here relative prices change and real income is held constant. But what is meant by constant real income? The two-dimensional construction is shown in Fig. 2. In the initial position the price of X (in terms of Y) is p_1 and the consumer's income is $M = OB$; the demands of the consumer are represented by the point P, on the income–consumption curve p_1 and on the price line AB with (negative) slope p_1. The price now changes to p_2. The consumer shifts to some position on the income–consumption curve p_2; which position depends entirely on his income in the new situation. The whole problem of defining the substitution effect is to fix a move which maintains the consumer's real income. If the price change is an increase in price (as illustrated in Fig. 2), then income in terms of *numeraire* Y must increase to maintain real income. The new price line with (negative) slope p_2 must cut the vertical axis above B, as do CD, C_1D_1 and C_2D_2 in Fig. 2. How much must income increase from $M = OB$? In Slutsky's terminology, what compensating income change from OB is needed to offset the price change?

We are not starting with any assumption of a preference scale, and we cannot answer this question right away. We can, however, place limits on the compensating income change. One move is from P to Q_1 on the price line C_1D_1 with (negative) slope p_2 which passes through P. The consumer's income is then increased from OB to OD_1. With this income and with the new price p_2, the consumer could continue to buy the quantities represented by the point P; in fact, he prefers to buy the quantities represented by the point Q_1. In Samuelson's terms, Q_1 is revealed to be preferable to P and the consumer is " better off " as a result of the shift. The increase in income from OB to OD_1 over-estimates the compensating income change.

Another move is from P to Q_2 on the original price line AB. The new price line through Q_2 is C_2D_2 and the consumer's income is increased from OB to OD_2. With this income and the new price p_2, the consumer would buy the quantities represented by Q_2. He could have bought these same quantities with the original income at the original price; in fact, he then preferred to buy the quantities represented by P. Following Samuelson, we say that P is revealed to be preferable to Q_2 and the consumer was " better off " before the shift. The increase in income from OB to OD_2 under-estimates the compensating income change.

We have now : Q_1 is revealed preferable to P, and P is revealed preferable to Q_2. What we wish to say is that Q_1 is revealed preferable to Q_2, and that under no circumstances can Q_2 be revealed preferable to Q_1. This is in fact the basic assumption of value theory to which Houthakker and Samuelson are led.[1] If this basic assumption is made, then we can be certain that Q_1 is higher than Q_2 on the income–consumption curve, that income OD_1 is greater than income OD_2, and that we have genuine limits to the compensating income change.

In addition, as Houthakker and Samuelson show, the basic assumption implies integrability, *i.e.*, the existence of an (ordinal) preference scale which can be represented by a system of indifference curves (in the two-dimensional case here illustrated) or indifference surfaces (in more than two dimensions). Hence, we can now assume an indifference map however many dimensions (commodities) we take. In Fig. 2 the indifference curve through P cuts the income–consumption curve p_2 at Q; the price line CD is tangential to the indifference curve at Q. The move from P to Q corresponds to constant real income in the sense that the consumer is equally well off at P and at Q. The compensating income change is thus from OB to OD; the substitution effect on demand is shown by the shift from P to Q.

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[1] Houthakker, " Revealed Preference and the Utility Function," *Economica*, May 1950; Samuelson, " The Problem of Integrability in Utility Theory," *Economica*, November 1950.

It is one thing to assert the existence of the indifference curve and the point Q; it is another to say that we can use them in practice to measure and apply the substitution effect. Following Samuelson, we can go so far as to say that, by judiciously varying price and income, we can get from observable data an approximation to the indifference curve, either just superior to it, or just inferior to it. That is, we are approximating to Q by means of points like Q_1 and Q_2; if we can choose our own steps in varying price and income, we can make them small and numerous enough always to keep Q_1 and Q_2 close to Q. Whatever we do, however, we must rely on limits to Q. If we only have the two prices p_1 and p_2, then the particular limits Q_1 and Q_2 are all we have for Q.

Making the Houthakker–Samuelson assumption, we reach the following conclusion on the substitution effect.[1] The price increases from p_1 to p_2 and the consumer shifts from the initial position P to some position on the p_2 income–consumption curve. The particular shift which leaves real income unchanged is from P to Q along an indifference curve, the price increase being compensated by an increase in income from OB to OD. The substitution effect on demand is shown by the changing co-ordinates of P and Q. In practice, given only the two price situations, Q cannot be identified except as lying between limits Q_1 and Q_2; the compensating income increase is only fixed as lying between BD_1 and BD_2.

Since the Houthakker–Samuelson assumption implies integrability, the conclusion extends at once to three (or more) commodities. From an initial point P in commodity space, the consumer shifts to some point on a new income–consumption curve as the relative prices change. The indifference surface and the two price planes through P cut this curve in three points (Q, Q_1 and Q_2). The substitution effect again corresponds to a shift from P to a point on a curve between two identifiable points Q_1 and Q_2. The only difference is that the curve is in three (or more) dimensions instead of two.

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[1] Historically, each of the three shifts from P to Q, Q_1 and Q_2 has been described as a compensated price change. Hicks in the text of *Value and Capital* uses P to Q; Slutsky had in mind the shift from P to Q_1, and Samuelson's first exposition took P to Q_2.

The fact must be recognised that a compensated price change (*i.e.*, the substitution effect) can be identified only within limits. But it turns out to be a fact of little significance as regards observable properties of consumer's demand. There is only one general and observable feature of the substitution effect on demand, and it is independent of whether the substitution effect is taken as a shift from P to Q_1, from P to Q_2 or from P to any position between Q_1 and Q_2. It remains to see what this property is.

In the case of a single commodity X and *numeraire* Y, illustrated by Fig. 2, the general property is that all positions from Q_1 to Q_2 lie to the N.W. of P when there is an increase in the price of X relative to Y. The demand for X falls when the price of the commodity rises and when there is a compensating increase in income of amount anywhere between the two limits. Conversely, the demand for X rises when there is a compensated fall in the price of X. This property can be written :

$$\Delta p \Delta x < 0$$

where Δx is the change in demand for X consequent upon a compensated price change Δp. As is shown algebraically below, the property can be generalised to the case of any number (n) of commodities and appears :

$$\Sigma \Delta p_r \Delta x_r < 0$$

where Δx_r is the change in demand following a compensated price change Δp_r ($r = 1, \ 2, \ . \ . \ . \ n$). The compensating income change can be that corresponding to Q_1, to Q_2 or to any position between these two.

This property expresses all we can know in general about the substitution effect on demand. Very broadly, it implies that on balance demands will fall when prices rise with a compensating rise in income. More strictly, if at least one price rises and no prices fall, then the demand for at least one commodity (among those which have risen in price) must fall. The price rise must be compensated by an income rise, but this compensation can be anywhere between the two identifiable limits. As a particular case, if the price of only one commodity changes (with a compensating income change), then the demand for the commodity changes in the opposite sense to the price.

Two final points can be made. First, the shifts from P to Q_1 and Q_2 differ for any finite price change. But, if we are considering only the *direction* of change for the point P, then the compensated price change is unique; Q, Q_1 and Q_2 all coincide in the limit as Q approaches P. So the fundamental equation in derivative form, as given by Slutsky–Hicks, is unambiguous as an indication of direction of change. It is only when a finite jump is made from P that we have to be clear as to how the jump is made. Second, the problem of the compensating income change is exactly that encountered in index-number theory. By definition, the price index is the ratio of the "compensating" income to the initial income, and the "compensating" income is that which leaves the consumer equally well off in the new price situation. In terms of index numbers, our conclusion is that a price index can be defined; however, given only two price situations, it cannot be measured but only approximated by one limit or another. This is familiar ground. The jump from P to Q_1 corresponds to the Laspeyres form of the index—the consumer getting better off by an income compensation which would permit him to continue to buy the initial quantities. The jump from P to Q_2 corresponds to the Paasche form of the index—the consumer getting worse off since the income compensation confines him to quantities which he could have bought initially.

III

The general analytical development for n commodities X_1, X_2 . . . X_n is as follows. In the initial situation the prices are $p_r (r = 1, 2, \ldots n)$ and the consumer's income is M. The consumer's demands are $x_r (r = 1, 2, \ldots n)$.

So
$$M = \Sigma p_r x_r \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (1)$$

where Σ extends over $r = 1$ to $r = n$.

In a second situation, let the prices be $(p_r + \Delta p_r)$, the demands $(x_r + \Delta x_r)$ and the consumer's income

$$M + \Delta M = \Sigma(p_r + \Delta p_r)(x_r + \Delta x_r) \quad . \quad . \quad . \quad . \quad (2)$$

So, from (1),

$$\Delta M = \Sigma p_r \Delta x_r + \Sigma \Delta p_r x_r + \Sigma \Delta p_r \Delta x_r \quad . \quad . \quad (3)$$

Assume, first, Samuelson's "weak axiom" (*Economica*, November 1950) implying consistency of preference as between two situations only. Then there are two approximations to compensated price changes :

Case A. This is the Laspeyres Case, corresponding to Q_1, of Fig. 2. The income of the second situation is such that the initial quantities can still be bought at the second prices :

$$M + \Delta M = \Sigma(p_r + \Delta p_r)x_r$$

i.e., from (2)

$$\Sigma(p_r + \Delta p_r)\Delta x_r = 0 \quad . \quad . \quad . \quad . \quad \text{(A1)}$$

The second situation is preferred to the initial, *i.e.*, the second quantities cost more than the initial quantities at the initial prices :

$$\Sigma p_r(x_r + \Delta x_r) > \Sigma p_r x_r$$

i.e.,

$$\Sigma p_r \Delta x_r > 0 \quad . \quad . \quad . \quad . \quad . \quad \text{(A2)}$$

So from (A1) and (A2)

$$\Sigma \Delta p_r \Delta x_r < 0 \quad . \quad . \quad . \quad . \quad . \quad \text{(A3)}$$

and from (A1) and (3)

$$\Delta M = \Sigma \Delta p_r x_r \quad . \quad . \quad . \quad \text{(A4)}$$

Case B. This is the Paasche Case, corresponding to Q_2 of Fig. 2. The income of the second situation is such that the quantities demanded at this income can be bought at the initial prices and income

$$M = \Sigma p_r(x_r + \Delta x_r)$$

i.e., from (1)

$$\Sigma p_r \Delta x_r = 0 \quad . \quad . \quad . \quad . \quad . \quad \text{(B1)}$$

The initial situation is preferred to the second, *i.e.*, the initial quantities cost more than the second quantities at the second prices :

$$\Sigma(p_r + \Delta p_r)x_r > \Sigma(p_r + \Delta p_r)(x_r + \Delta x_r)$$

i.e.,

$$\Sigma(p_r + \Delta p_r)\Delta x_r < 0 \quad . \quad . \quad . \quad . \quad \text{(B2)}$$

So from (B1) and (B2)

$$\Sigma \Delta p_r \Delta x_r < 0 \quad . \quad . \quad . \quad . \quad \text{(B3)}$$

and from (B1) and (3)

$$M = \Sigma \Delta p_r(x_r + \Delta x_r) \quad . \quad . \quad . \quad \text{(B4)}$$

Now, assume Samuelson's "strong axiom" (*Economica*, November 1950) implying consistency of preference for a series of situations and hence integrability. This permits us to take Cases A and B together, (A4) giving an upper limit *and* (B4) a lower limit to the compensating income change. Further, the true compensated price change can be defined :

Case C. This corresponds to Q of Fig. 2.

The income of the second situation is such that the quantities demanded are on the same indifference level $u(x_1, x_2, \dots x_r) =$ constant as the initial quantities. The initial situation is preferred at the initial prices, and so the second quantities cost more than the first quantities at these prices :

$$\Sigma p_r(x_r + \Delta x_r) > \Sigma x_r p_r$$

i.e.,
$$\Sigma p_r \Delta x_r > 0 \quad . \quad . \quad . \quad . \quad . \quad \text{(C1)}$$

Similarly the second situation is preferred at the second prices :

$$\Sigma(p_r + \Delta p_r)(x_r + \Delta x_r) < \Sigma(p_r + \Delta p_r)x_r$$

i.e.,
$$\Sigma(p_r + \Delta p_r)\Delta x_r < 0 \quad . \quad . \quad . \quad . \quad . \quad \text{(C2)}$$

So from (C1) and (C2)

$$\Sigma \Delta p_r \Delta x_r < 0 \quad . \quad . \quad . \quad . \quad . \quad \text{(C3)}$$

and from (C1), (C2) and (3)

$$\Sigma \Delta p_r(x_r + \Delta x_r)_r < \Delta M < \Sigma \Delta p_r x_r \quad . \quad \text{(C4)}$$

Collecting the results (A1) to (C4) together, we find three cases where the change in prices is compensated by a change ΔM in income in such a way as to give the fundamental inequality :

$$\Sigma \Delta p_r \Delta x_r < 0.$$

The three compensating changes are :

	Case A (Laspeyres).	Case B (Paasche).	Case C (Indifference).
$\Sigma p_r \Delta x_r$ . . .	> 0	$= 0$	> 0
$\Sigma(p_r + \Delta p_r)\Delta x_r$.	$= 0$	< 0	< 0
ΔM . . .	$\Sigma \Delta p_r x_r$	$\Sigma \Delta p_r(x_r + \Delta x_r)$	Between $\Sigma \Delta p_r(x_r + \Delta x_r)$ and $\Sigma \Delta p_r x_r$

In the above table, Δx_r refers to a particular shift and differs from one column to another. The shift is from P to Q_1 for Case A, to Q_2 for Case B and to Q for Case C. The $\Delta x_r (r = 1, 2, \dots n)$ are observable in Cases A and B; the $\Delta p_r (r = 1, 2, \dots n)$ are given by the postulated price change.

The price-index-number problem can be expressed as follows. The compensating income change ΔM is limited by the values of Cases A and B :

$$\Sigma \Delta p_r(x_r + \Delta x_r) < \Delta M < \Sigma \Delta p_r x_r$$

where Δx_r corresponds to the shift from P to Q_2 for which $\Sigma p_r \Delta x_r = 0$.

So
$$\frac{\Sigma(p_r + \Delta p_r)(x_r + \Delta x_r)}{\Sigma p_r(x_r + \Delta x_r)} < \frac{M + \Delta M}{M} < \frac{\Sigma(p_r + \Delta p_r)x_r}{\Sigma p_r x_r}$$

since
$$M = \Sigma p_r x_r = \Sigma p_r(x_r + \Delta x_r).$$

Changing the notation so that p_0, x_0 refer to the first situation (P) and p_1, x_1 to the second (Q_2), we have the limits for the price index I_{01}:

$$\frac{\Sigma p_1 x_1}{\Sigma p_0 x_1} < I_{01} < \frac{\Sigma p_1 x_0}{\Sigma p_0 x_0}.$$

Here x_1 corresponds to the particular demands at the p_1 prices for which

$$\Sigma p_0 x_1 = \Sigma p_0 x_0.$$

The actual demands of the consumer in the second situation have no relevance; they correspond to some change in real income in addition to the substitution effect. This is precisely the position taken by Staehle.[1]

The Slutsky–Hicks theory, in the form developed in the Appendix to *Value and Capital*, appears as the limiting case of the above development, finite changes in prices and income being replaced by differential changes (*i.e.*, directions of change). Any price change $dp_r (r = 1, 2, \dots n)$ is compensated by the income change

$$dM = \sum_r x_r dp_r$$

and we have (Cases A, B and C all coinciding):

$$\left.\begin{aligned} \sum_r p_r dx_r &= 0 \\ \sum_r dp_r dx_r &< 0 \end{aligned}\right\} \quad . \quad . \quad . \quad . \quad . \quad . \quad (4)$$

Also

$$\begin{aligned} dx_r &= \sum_s \frac{\partial x_r}{\partial p_s} dp_s + \frac{\partial x_r}{\partial M} dM \\ &= \sum_s \left(\frac{\partial x_r}{\partial p_s} + x_s \frac{\partial x_r}{\partial M} \right) dp_s \\ &= \sum_s x_{rs} dp_s \end{aligned}$$

where $x_{rs} = \frac{\partial x_r}{\partial p_s} + x_s \frac{\partial x_r}{\partial M}$ is Hicks' substitution term.

All the properties of x_{rs} are derivable from the conditions (4), *i.e.*, from

$$\sum_r \sum_s p_r x_{rs} dp_s = 0$$

$$\sum_r \sum_s x_{rs} dp_r dp_s < 0$$

for any price changes whatever.

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[1] Staehle, "A Development of the Economic Theory of Price Index Numbers," *Review of Economic Studies*, June 1935.

THE PREMIUM ON U.S. DOLLAR SECURITIES

Comparatively few people are aware of the existence before their eyes of a phenomenon which is unusual in these days of government control—a pure equilibrium price, in the disembodied form of the premium on U.S. dollar stocks on the London Stock Exchange.

This dollar premium, as it is usually if elliptically called, has not attracted all the attention it deserves, partly because it has existed in its present context only since October 1947, and partly because the surrounding technicalities have concealed its interesting theoretical implications. This survey therefore sets out to explain the characteristics and working of the dollar premium, its history, the reasons for its existence, why it is uniform and the way its size is determined.

The Nature of the Dollar Premium

Each day there appears in the *Stock Exchange Daily Official List* a single quotation, thus : " U.S. dollar securities : premium on United States quotations, 16%." This premium is the percentage addition to an American price of a security converted into sterling at the official rate of exchange. It applies equally to all American stocks other than those particular holdings placed at the Treasury's disposal in 1941 and pledged against the R.F.C. loan. If a share is quoted in New York at $100 when the premium here is 17% and the official rate of exchange is $2·80, the sterling value of that share in £s in London, and the price (subject only to dealing expenses) at which it changes hands, is £[(100 + 17)% × $100 ÷ $2·80], or £41·8. In practice, the latter price would be written as $209 London, owing to the stock exchange convention of expressing prices of American securities in London dollars having a fixed value of $5 London = £1.

The dollar premium can also be described as the percentage addition to the sterling cost at the official exchange rate of a U.S. dollar, and a special rate can therefore be worked out which consolidates the premium and the official rate. The resulting figure is the British market rate for securities dollars, which are U.S. dollar values held in the form of American securities in U.K. ownership. Given the premium and the official rate, the calculation is :

$$100 \times \frac{\text{official rate of exchange in \$ per £}}{(100 + \text{premium})} = \begin{array}{c}\text{rate of securities}\\ \text{dollars per £}\end{array}$$

London Premium on U.S. Dollar Securities

Weekly, October 1947–September 1950 *

(Official exchange rate : $4.03 = £1 to September 18, 1949, $2.80 thereafter)

Date.	Premium, %.	Securities $, per £.	Date.	Premium, %.	Securities $, per £.
1947 Oct. 1	10	3·66	1948 Sept. 15	29	3·12
2	15+	3·50−	22	29	3·12
3	16–17	3·44–3·48	29	29	3·12
6	18½–20½	3·35–3·40	Oct. 6	30	3·10
7	up to 18	3·42+	13	29	3·12
8	15–17	3·44–3·50	20	30	3·10
9	12–14	3·54–3·60	27	29	3·12
10	12–14	3·54–3·60	Nov. 3	28	3·14
			10	31	3·08
15	12–13	3·55–3·60	17	31	3·08
22	11–12	3·60–3·63	24	30	3·10
29	10–14	3·54–3·66	Dec. 1	32	3·05
Nov. 5	15–17	3·44–3·50	8	31	3·08
12	15–16	3·48–3·50	15	31	3·08
19	14½–16	3·48–3·52	22	32	3·05
26	16–17	3·44–3·48	29	33	3·03
Dec. 3	17–18	3·42–3·44			
10	16	3·48			
17	16	3·48	1949 Jan. 5	32	3·05
24	19	3·38	12	32	3·05
31	17½	3·43	19	32	3·05
			25	31	3·08
1948 Jan. 7	18½	3·40	Feb. 2	30	3·10
14	22	3·30	9	29	3·12
21	25	3·22	16	25	3·22
28	23½	3·26	23	27	3·17
Feb. 4	up to 29	3·12−	Mar. 2	27	3·17
11	22½	3·29	9	26	3·20
18	21½	3·32	16	25	3·22
25	23	3·28	23	24	3·25
Mar. 3	25	3·22	30	24	3·25
10	25	3·22	Apr. 6	25	3·22
17	26½	3·19	13	29	3·12
24	29½	3·11	20	29	3·12
31	26½	3·19	27	32	3·05
			May 4	32	3·05
Apr. 7	28¾	3·13	11	33	3·03
14	26¾	3·18	18	34	3·01
21	27½	3·16	25	33	3·03
28	29	3·12	June 1	33	3·03
May 5	34	3·01	8	34	3·01
12	33½	3·02	15	34	3·01
19	35	2·99	22	33	3·03
26	34¾	2·99	29	33	3·03
June 2	34¾	2·99	July 6	34	3·01
9	34	3·01	13	35	2·99
16	29½	3·11	20	35	2·99
23	29	3·12	27	36	2·96
30	26½	3·19	Aug. 3	35	2·99
July 7	26½	3·19	10	35	2·99
14	26	3·20	17	36	2·96
21	23	3·28	24	36	2·96
28	25½	3·21	31	36	2·96
Aug. 4	24½	3·24	Sept. 7	36	2·96
11	25	3·22			
18	27	3·17			
25	27½	3·16	14	36	2·96
Sept. 1	32	3·05	15	36	2·96
8	27½	3·16	16	36	2·96

London Premium on U.S. Dollar Securities—continued

Date.	Premium, %.	Securities $, per £.
1949 Sept. 19	8 †	2·59
20	4	2·69
21	5	2·60
28	11	2·52
Oct. 5	12	2·50
12	14	2·46
19	13	2·48
26	12	2·50
Nov. 2	16	2·41
9	21	2·31
16	17	2·39
28	18	2·37
30	18	2·37
Dec. 7	16	2·41
14	16	2·41
21	14	2·46
28	14	2·46
1950 Jan. 4	14	2·46
14	13	2·48
18	14	2·46
25	15	2·44
Feb. 1	13	2·48
8	13	2·48
15	13	2·48
22	13	2·48
Mar. 1	14	2·46
8	15	2·44
1950 Mar. 15	15	2·44
22	15	2·44
29	15	2·44
Apr. 4	16	2·41
12	15	2·44
19	16	2·41
26	16	2·41
May 3	16	2·41
10	17	2·39
16	18	2·37
24	16	2·41
31	15	2·44
June 7	13	2·48
14	11	2·52
21	12	2·50
28	11	2·52
July 5	11	2·52
12	12	2·50
19	12	2·50
26	12	2·50
Aug. 2	13	2·48
9	13	2·48
16	14	2·46
23	13	2·48
30	11	2·52
Sept. 6	11	2·52
13	12	2·50

* Daily, October 1–10, 1947, and September 14–21, 1949. Devaluation of sterling was announced Sunday, September 18, 1949.

† Unofficial, from *Financial Times*.

Sources :

October 1–10, 1947 : *Financial Times* market reports.

October 15, 1947, to March 31, 1948 : Direct estimates from comparisons of London prices and English equivalents of New York prices of four leading equities. The results are approximate only, and do not cover the full range of the premiums.

April 7–September 8, 1948 : *Investors Chronicle*.

September 15, 1948 and after : *Stock Exchange Daily Official List*, as quoted in the *Financial Times*.

For instance, with a premium of 17%, the securities dollar rate becomes $2·39, and the effect is that the sterling price of a U.S. share in London is the same as if the original American price were converted at the securities dollar rate instead of the official rate. Since the dollar premium and the securities dollar are different expressions of exactly the same concept, the terms are used indifferently in the following analysis.

History of the Securities Dollar

Between the beginning of the war and October 1947, a few specific overseas non-sterling securities remaining unrequisitioned could be bought and sold between British residents at a negotiated sterling price which differed from the foreign price converted at the official rate. But the premium or discount was not uniform for all stocks denominated in any one currency, as it depended on the relationship between the supply of and the demand for specific holdings already in British ownership.

In October 1947, a considerable measure of freedom in dealing was restored. The position since then has been that, under licence, foreign (*i.e.*, non-sterling) securities may be exchanged without restriction between U.K. residents. Foreign securities can also be sold overseas if the proceeds are at once surrendered to the Treasury at the official rate (provided, of course, that the proceeds can in fact be repatriated here, like U.S. dollars), or re-invested [1] promptly and fully in other stocks in the country of the currency in which the original security was expressed. Thus British investors can neither retain a balance of foreign currency, nor acquire any for net purchases abroad other than through the re-investment of sales proceeds.

It was some little time before the full possibilities of these changes were grasped and the technicalities worked out. Only at the beginning of 1948 did a uniform premium become the rule, and not until September 1948, when the Inland Revenue first required inclusion of the U.S. dollar premium in valuations for probate, did the dollar premium become officially quoted in the *Stock Exchange Daily Official List* in its present form. The way in which the dollar premium has fluctuated in the course of its existence is shown in the accompanying table, which gives also the rate for the securities dollar corresponding to each premium.

WHY THE DOLLAR PREMIUM EXISTS

Those who erroneously believe a securities dollar or pound to be equivalent to a monetary dollar or pound were apt before September 1949 to regard the dollar premium as the extent to which the official rate of exchange overvalued sterling. Yet the eventual 30·5% devaluation of the pound was in greater proportion than had been expected, and the dollar premium should under this argument have disappeared. But there has always been a premium of some sort, although for a few days it fell to a very low level.

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[1] Re-investment facilities overseas do not apply to Canadian shares or to those U.S. shares in the R.F.C. deposit, though such securities can be bought and sold between British residents. Canadian stocks can be sold in Canada, and the proceeds sold to the Treasury. Holdings in the original R.F.C. deposit can be sold direct to the Treasury. Newly acquired holdings of R.F.C. stocks enjoy the usual switching facilities.

The reason is that the dollar premium consists broadly of two groups of factors: exchange factors which are fundamental to all transactions in American shares, and the technical factors which reflect the *investment* merits of American shares in the aggregate or individually. Although these different influences seem to have worked in the same direction most of the time, it does not necessarily follow that they must always pull the same way, for a dollar premium is the resultant of different stresses, some of which may give rise to a premium and some to a discount when working in isolation. (A net discount can arise in theory, but not in practice, so long as dollar sales proceeds can be repatriated here and sold to the Treasury at the official rate.)

Exchange factors: (i) *Official exchange rate.* British investors are collectively interested in the official rate of exchange principally because that is the rate at which income is convertible. While income is not the only consideration in the short run, the capital values which affect even the speculator rest in the last analysis largely upon the expectation of future income by the person who buys from the speculator at one or more removes.

Now the income from a foreign security can, at any rate on the short view, be regarded as fixed, and the price of the stock in the principal market in which that stock is traded is the norm to which prices in subsidiary markets would tend, given free exchange rates and international security dealings. Under exchange control, a premium or discount here on the shares of any overseas country means that there is a disparity between the exchange rate at which the capital is bought and that at which the income is converted, and hence a difference in yield arises as compared with the local market.

If a foreign currency is thought to be generally under- or overvalued in terms of sterling because of economic and political factors, a sterling premium or discount on such securities is partly in anticipation of a change in the official exchange rate. Such an alteration would then reduce, cancel or even over-correct the disparity between the ratio of income to capital in the British and the foreign markets. Suppose in the summer of 1949 an American share had yielded $5 a year on a capital cost of $100, and the dollar premium here had corresponded exactly to the eventual exchange rate of $2·80—it did not in fact ever rise so high—the share in London would have cost £($100 × 144% ÷ $4·03), and would have yielded an income of £($5 ÷ $4·03). After devaluation, that income would have risen to £($5 ÷ $2·80), and the yield on the original cost would then have become 5% in the U.K. and the U.S.A. alike.

(ii) *Convertibility-preference.*—Expectation of a change in the official rate is not, though, the only reason for tolerating a yield differential on the same security. A premium can exist if any preference is shown at all—no matter how irrational the grounds—for dollar securities as compared with sterling, so long as exchange control precludes arbitrage in currencies and the equalisation of prices in all markets. If dollars are in fact preferred to sterling and cannot for any particular purpose be bought from the authorities at the official rate, they will in any free market open to them command a premium at any level whatever of that rate. Thus the securities dollar or, say, the current securities sterling rate in New York, is neither a true general equilibrium rate which the official rate should aim at nor an anomaly to be suppressed, because the stock markets' view of the unsuitability or otherwise of the official rate of exchange for the conversion of current income is only one element in the situation.

The behaviour of free markets under the war and post-war exchange control systems is making it clearer that the value of money is not only the quantity of goods that it will buy, but also the extent of the variety of things upon which it is effectively spendable. In short, convertibility is no less important than money's worth, and it is common knowledge that, on the demand side, dollars as compared with sterling enjoy what can for convenience be called convertibility-preference.

The securities dollar is merely a dollar's worth of American securities, and being subject to various limitations, it is less useful than a monetary dollar and does not possess the maximum value arising from convertibility-preference. It is, however, the next best thing that British residents can hold for any length of time, since monetary dollars which come into the hands of a British resident must be surrendered as soon as received at the official rate.

The essential value of the securities dollar, so far as it arises from convertibility-preference, lies in the right to choose time: to retain dollar securities in one form or another in perpetuity or to choose the moment to sell to the U.K. control, or to deal in the British market in such a way as to take advantage of fluctuations in prices. It is, of course, not practicable to distinguish the value of this option from the other exchange element. But the dollar premium probably no longer contains anticipation of a change in the official rate, and is compounded of the time-option and of the resultant of those technical investment factors mentioned below which make it possible to make rough generalisations about the relative desirability of dollar and of British securities.

Technical factors : (i) *Yields.*—While it is notoriously difficult to produce valid international comparisons of yields, because so much depends on which shares are chosen, and on whether the two groups of securities selected are in fact comparable, it is usually accepted that Wall Street yields on equities have on the average been higher than British yields on shares of similar standing over most of the period during which the dollar premium has existed. Thus towards the end of July 1950 the Actuaries Investment Index showed average yields of 5·57% on 120 British industrial ordinary shares and the *Financial Times* 5·02% on thirty equities, while Standard and Poors reported average yields of 6·74% on American common stocks. American companies, moreover, have not been subject to dividend limitation.

(ii) *Market and cyclical factors.*—These are highly complex, and as far as the dollar premium is concerned, can be said to sum up the general British view of the course likely to be taken by Wall Street as contrasted with the London market. In recent years the two markets have by no means moved together, and during much, but perhaps not all of the time since switching facilities were granted the American economy has been regarded as the more favourable of the two for investors. If, for instance, it were feared that local American prices had become too high to last, consistent pressure to sell in London would depress the premium, while expectation of steady inflation in the U.S.A. would be one of the causes likely to raise the British demand for American stocks.

(iii) *Tax relief.*—There is an important if anomalous factor which affects those British taxpayers who hold American common shares. With American bonds and preferred shares, the British taxpayer is in the same position as if he held British securities. With equities, however, he can obtain tax credits which allow for a proportion of Federal taxes paid by the company before striking the balance available for dividend. It is as if he could offset a company's rate of profits tax against his personal tax liability on his share of gross divided profits before taxation.

UNIFORMITY OF THE DOLLAR PREMIUM

A British holder does not assess the relative merits of different American securities in quite the same way as Wall Street. Differences in yield on comparable British and U.S. securities can affect only specific shares. Likewise, the tax benefits concern only common shares, and to a different extent in different companies.

In spite of these differences, the dollar premium is in fact uniform because U.S. securities are freely interchangeable, and one securities dollar is regarded as useful as another in the same way that to a retailer of goods here one pound note is as good as any other pound note.

The continuous process of exchanging the less for the more advantageous dollar stocks must in principle affect the cash sterling share prices, which are a combination of the American prices and the prevailing dollar premium. Now demand here for a particular American share is not necessarily, nor even usually, satisfied by a purchase from some other British holder of that same share. Sellers can be either the original British investors, or dealers resident in this country who make exchanges in American markets. Say British holders of American stocks A, B and C wish to sell them, while other British residents want to buy American stocks D, E and F of equivalent aggregate value. The London market will buy A, B and C from the sellers for sterling calculated at the securities dollar rate and sell them for dollars in the U.S. market at the local dollar price, and with the proceeds buy D, E and F also at the local dollar price. Finally, D, E and F will be sold by the London market to the British buyers for sterling converted at the securities dollar rate, thus closing the circuit.

Hence demand for specific American shares which are not already in British hands will be reflected in an increased demand for those shares in the U.S.A., and in theory in a higher Wall Street price. Likewise U.S. shares held in this country which do not find a buyer here can be sold in the U.S.A., and other things being equal would depress the local price. The volume of dealing on British account would in practice seldom be enough to affect the American price noticeably. The point is that it is the U.S. price and not the dollar premium which is affected by shifts of demand, no matter where they originate, between individual securities. On the other hand, a consistent pressure here to sell or buy American shares generally of course depresses or raises the dollar premium, but does not give rise to differential percentages.

The reason for this is that so long as British holders of American securities are free to switch them in U.K. or American markets at choice, arbitrage among the London holdings will prevent the emergence of differential premiums. If the London premium on share A were temporarily to become higher than on share B, a dealer would buy share B for sterling, sell it in New York and reinvest the dollar proceeds in share A, which would then be sold in London for sterling at a profit. The purchase of B and the sale of A in London would then tend to bring their sterling values into the same ratio as the American prices, and hence to equate the two premiums.

It is perhaps truer to say that arbitrage keeps differential premiums within such narrow limits that they are virtually at one level. The expenses of having to deal in the U.S.A. as well as in the London markets are quite measurable, and these arbitrage expenses permit the emergence of small differences such as arose in currency transactions due to the operation of the gold points before 1914. A small differential premium would not be quoted as such, but would be absorbed in the London sterling quotation, and would be seen to exist only on close comparison between the New York and London cash prices at any one moment.

Put in general terms, a sterling premium or discount on securities denominated in the currency of an overseas market will be uniform so long as the values of the securities relative to one another are determined in that overseas market, and British residents are free to effect exchanges there. The latter condition is not fulfilled in the case of Canadian securities and R.F.C. holdings, hence differential premiums arise for these shares. And in theory if shares of an American company were concentrated in British hands in such a way that London became the principal market for those particular shares, the sterling price would probably disclose a premium which differed from that on American securities as a whole.

The Size of the Dollar Premium

The final question—what determines the size of the premium?—is at once the simplest to answer and the most important. The market in which the values of American shares are established relative to one another is in New York and other U.S. centres, but the market in which the demand is manifested for American securities generally as compared with British securities generally is in this country.

If American shares could be freely bought in the U.S.A. with monetary dollars supplied at the official rate, the exchange control would run out of dollar resources unless these could be replenished by the remaining transactions in the balance of payments. If dollars could be purchased at a free exchange rate, there would be no dollar premium as such, as the demand for dollars to buy shares would become merely one element in the current exchange rate. And if switching facilities were to be withdrawn, leaving U.S. shares exchangeable only between British residents, the effective premium would differ as between different securities. Instead, the situation that actually exists is that the exchange control permits dealings in U.S. securities in such a way that there is a direct sequence of sales and purchases between the securities held before October 1947 and those held now, and the commodity dealt in on the market which establishes the dollar premium is in effect the securities dollar.

The corpus of American securities in this country is not fed from outside sources, a few specific shares may have disappeared in the past because of sales without re-investment in the U.S.A., and the aggregate value is in constant fluctuation over a period not only because of U.S. price changes, but also because the underlying securities themselves are constantly changing. In the short run, however, the value of American securities in British hands is rigidly fixed, and on any one day the dollar premium expresses an equilibrium price, at which the quantity of all U.S. securities sold by some and bought by other British holders is exactly equal. The quantity in this connection is the American market value of all the American securities dealt in on British account either here or in the U.S.A. and is not, as with local share transactions, a quantity of shares. And this equilibrium price is that at which the marginal British holder of American securities is prepared to give up the right to his securities dollars and hold sterling instead, and thus evaluates the advantage of owning American securities generally in contrast with sterling.

CONCLUSION

To sum up this analysis, where exchange control prevents free interchange between international stock markets, a premium or discount on foreign securities (as compared with foreign prices converted at the official rate of exchange) arises whenever those securities are regarded collectively and on balance as more or less desirable than domestic shares, no matter what causes that preference. Belief that the official exchange rate is inappropriate and will be corrected is not the only reason, and may not even be the chief one. Nor need the various factors underlying the net preference all work in the same direction.

In the case of dollar stocks, a premium arose partly in anticipation of devaluation, and partly because American securities carry an option to choose the time (if any) at which to convert them into sterling, and thus share in some of the convertibility-preference that attaches to free dollars. In addition, there are a number of separate considerations of a technical or investment character which may on balance either increase or decrease the desire to hold American securities at any one moment.

While the importance of these different factors cannot be separated, it would seem from movements in the dollar premium since the autumn of 1949, when it fell sharply after devaluation only to rise to about half its pre-devaluation level, that the anticipation factor (anticipation, that is, of a revised official rate) never accounted for much more than half the premium, and at present probably does not enter into the picture at all. The immediate post-devaluation premiums covered the convertibility plus the yield, taxation and general market factors. It is, of course, no better than guesswork, but it looks as if from say May 1950 onwards short-term fluctuations have been caused by investment rather than by convertibility considerations. The latter, if not actually diminishing in importance as the supply of dollars to the world at large improves, is unlikely to vary much from one day to another.

Since the relative merits of different American shares are reflected in the U.S. market prices, and British holders are permitted to switch in U.K. or U.S. markets at will, the possibility of arbitrage precludes the emergence of differential premiums, even though securities equally attractive to American investors are not, for technical reasons, equally attractive to British investors.

Any preference for one American share as compared with another appears in the sterling price only if it causes movements in the American price. On the other hand, the degree of preference for American stocks generally as compared with British stocks generally is reflected in movements in the dollar premium. That premium on any one day is the equilibrium price at which the total quantity of American securities bought and sold are equal, as measured by aggregate dollar values.

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DIVERSIFICATION OF INDUSTRY

THE following note deals briefly with arguments for and against diversification of industry and with certain practical aspects of it.

I

An important argument against the pursuit of industrial diversification as a general policy is that it runs counter to the localisation in particular areas of industries of similar and complementary types. It therefore opposes the gains of industrial specialisation which, it is well known, are no less considerable than important. Especially, it militates against the low costs of production attainable by industrial specialisation. It does so either by causing the removal of part of the specialised industries elsewhere or by leaving them intact and introducing into the areas concerned industries of different sorts. In the former case, there is the serious risk that the part of the specialised industries removed will be driven to inferior locations. In the latter case, competing demands for the factors of production by the newly introduced industries may curtail their supply and drive up their costs to the specialised industries, while valuable external economies—such as industrial and commercial linkages, transport facilities and other specific service facilities—may be impugned.

Furthermore, to oppose specialisation in order to secure the advantages of diversification is wrongly conceived. For the history of industrial growth shows that, after a certain point, specialisation itself breeds diversity.[1] It does so by attracting industries subsidiary to the main industry, and later on these enter upon the making of products for other industries. It also does so by the need to employ the growing working population which the main industry is not able to absorb. Lastly, it does so by creating demands for industrial and social services.

For the reasons given above, and because thorough-going industrial diversification may lead to a less efficient allocation of productive resources by involving departure from the existing pattern of industrial distribution, a lowering of general productive efficiency and a raising of costs may not be avoidable. As contended hitherto by supporters of industrial diversification, the central purpose of it is to attack unemployment. If that attack were aimed at reducing unemployment by seeking to improve the existing distribution of productive resources, so lowering costs, it would merit approval. In fact, the attack is rather directed to sharing more equally—as between one area and another—whatever unemployment may be experienced. To move productive resources to serve this end might be to depart radically from the pattern of industrial distribution which is consistent with the most efficient use of such resources. That would raise costs.

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[1] Cf. also *Report of the Royal Commission on the Distribution of the Industrial Population*, Cmd. 6153, g. 74.

If, as suggested, the curtailment of industrial specialisation and the alteration of the present distribution of industry increased costs, export might be harmed. Moreover, industrial diversification is ordinarily regarded as peculiarly appropriate for areas very dependent upon capital-goods industries or export trades. That dependence, it is assumed, would be mitigated by introducing industries of contrasted type—*e.g.*, consumption-goods industries in the first case, and home-market goods industries in the second case. But since frequently capital goods enter substantially into export as well as the export trades themselves, the net effect of such diversification may be to reduce the proportion of the national productive resources devoted to export. For, while part of the industrial diversity postulated for these areas might be secured by transfer there of firms already existing elsewhere, probably the greater part would have to be obtained by attracting new enterprise to the areas. In so far as, under governmental control of industrial location, this caused manufacturers of consumption goods and home-market goods to obtain preference in access to factors of production, producers of capital goods and export products would be starved of those factors. Lastly, if, as may be assumed, the pursuit of industrial diversification reduced the geographical mobility of labour, again export might suffer. For export industries need more labour than they have now if they are to grow sufficiently to achieve, and to maintain, a favourable balance of payments; and it is doubtful if that additional labour can be obtained without some geographical movement of labour.

This restraint upon the territorial mobility of labour would handicap adaptation, not only by export industry, but also by industry in general, to economic change. Yet the need for such adaptation may conceivably be greater in the foreseeable future than in inter-war times. Thus, this country's commitment to export of industrial goods will be larger than then, and fluctuation in export is of greater magnitude than in domestic production;

high and stable employment programmes will call for spatial movement by work-people; and new and newer industries will need to be developed or expanded to countervail the contraction of old, staple industries—on which in future this country may have to place less reliance.

It could be argued that industrial diversification is not an effective antidote to cyclical unemployment, or unemployment caused by a general depression. For cyclical fluctuation may drive down all industrial activity to low levels—and for not inconsiderable periods. Nor is that possibility lessened by this country's great commitment to export and the probability that in future the range of production for export will be wider than during the last three decades. In the case of general depression, industrial diversification, *ex hypothesi*, would be limited in its prophylactic capacity.

To turn to another line of argument, experience shows that industrial diversification, *per se*, may not prove in practice to confer the theoretically feasible advantage of insulating local areas from severe unemployment. Instances can be found of diversified places which, during the inter-war period, experienced both serious and long-lasting unemployment. These include Hull, Glasgow, Great Yarmouth, Grimsby, Leith, Bridgwater and Bideford. On the other hand, there are examples of places with specialised industry that then had much less severe unemployment—often, indeed, below the national average. These include Coventry, Rugby, Burton-on-Trent, Northampton, Derby, Kidderminster, Dursley, Kettering, High Wycombe, Stroud, Elland and Tiverton.

On the score of practical efficacy again, the point has to be met that the places that are the more obvious candidates for industrial diversification are sometimes those in whose case it is less feasible to achieve it. Such candidates include places committed to high industrial specialisation where the labour force is of substantial size. For these, a given dose of diversification is potentially less effective than where the labour force is not substantial—*e.g.* Sheffield on the one hand and Redditch on the other. Again, coal-mining areas, with their strong dependence upon coal, and numerically substantial labour forces, are such candidates. But they are notoriously deficient in sites suitable for alternative industry. Moreover, they often lack the complex of utility services and suitable, trained labour that alternative industry requires. Small towns—such as Yeovil, Dursley, Consett, Tiverton, Scunthorpe and High Wycombe—that rely heavily upon one firm or industry for their primary income, and on that ground are clearly eligible for diversification, may have to import labour for the new industries. Where such small towns are remote from population, or are situated in areas of high labour demand, that may not be easy.

It has to be realised that where diversification of one place is achieved by removing industry from another, the latter does not remain unaffected. Frequently, less diversification will result in the place losing industry. In any event, the lowering of demand for labour there may necessitate a movement away of labour. Where diversification is brought about by introducing newly originating industry, again what one place gains is another's loss. Whether the one exceeds the other will depend upon the particular circumstances of each case.

In reality, less economic disturbance may result if diversity is secured by varying the products of firms already located in given places. Where this is practicable the need to shift economic resources of various kinds, and the repercussions following upon such shifting, may be minimised. In particular, the necessity to enlarge local populations, and to provide the additional social capital required, may be in large part escaped. That would *pro tanto* economise resources.

It is a commonplace that the majority of urban areas in the country—to say nothing of rural areas—clamour for diversification of their industries. To respond to all these clamours would not be possible except over a long period of time. Even then there may be insufficient mobile industry to satisfy the demands for it.

Lastly, it may be doubted whether, as yet, the criteria by means of which to determine: (*a*) the need of an area for industrial diversification, and (*b*) the best means of accomplishing it having regard to the economic interest of the country as a whole, have been satisfactorily established.

II

Arguments in favour of industrial diversification may now be stated. In the main, they are rebuttals of the unfavourable arguments. They are stated first, and the positive arguments for industrial diversification follow.

To start with the contention that the conception of industrial diversification is erroneous, since, after a point, specialisation always breeds diversity, this is challengeable. For, as Hoover[1] points out, specialisation is cumulative—feeding on itself. The history of industry certainly contains many instances of this. Again, it is less frequently the case that subsidiary industries serve the needs of other industries as much as those of the main, specialised industries. The subsidiary industries therefore intensify specialisation rather than promote diversification. Perhaps the best instance of the diversity of products brought about by the extension of subsidiary industries is the Birmingham area. But the most recent survey [1] of that area shows that these are more dependent upon the motor-vehicle industry than upon anything else. To rely, then, on subsidiary industries to evoke true diversification is to be unrealistic. Lastly, a specialised industry does not always breed local subsidiary industries on a substantial scale—*e.g.*, coal, tinplate, chemicals, jute and pottery.

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[1] E. M. Hoover, *The Location of Economic Activity*, p. 289.

As for the assertion that diversification is inimical to specialisation of industry, it may be asked if there is any over-riding reason why specialised and diversified industries should not live and flourish side by side. Perhaps the readiest way of answering this question is to ask another. What, in reality, would prevent alternative industry from settling in areas of specialised industry? One manifest difficulty is lack of industrial sites. Experience shows, however, that this is not universal—it is prominent only in large, congested urban areas, in coal-mining districts (in certain areas) and in places where local topography imposes limits. Moreover, where sites do not already exist, again experience shows that more often than not they can be created. While sometimes these may have to be outside the existing industrial zones, ordinarily they can be devised within "labour areas"—*i.e.*, within the distance from home to which work-people are disposed to travel. Another difficulty is that the available labour may be already taken up by the specialised industry. This has been true in the abnormal conditions since the war; but under normal conditions it is not usually the case that all the labour reserves of towns and outlying districts are fully mobilised. And short-distance movement of labour, where it would have to be resorted to, is more practicable than long-distance migration. Still another difficulty is that the essential industrial and social services—such as utility services, housing and education—may be fully utilised already. The remedy of extensions or new construction is, however, generally feasible. Few other difficulties are major ones.

To turn now to the assertion that industrial diversification will probably raise the costs of specialised industries, it would be rare for it to do so by causing these to emigrate to inferior locations. For such industries ordinarily do not lend themselves to transfer. A number of them are chained to the spot because they are extractive industries. Others depend on the existence of factors of production which they could not command elsewhere. In the case of still others, the productive resources essential for them could be brought into being elsewhere only after a long time had elapsed—a time too long to be tolerated where the need for diversification is urgent. But in the few instances where such emigration was deemed to be essential it would not inevitably be to an inferior location. To assume this is to take the view that all existing locations are, and forever will be, the best. That cannot be true. The factors that affect location are never constant, but alter as economic conditions alter, from time to time. It is therefore at least possible that other places will afford as efficient a site as that from which the move is made. This possibility is reinforced by the fact that private industry has sited but a few of this country's industries in one part only of it. It is further reinforced by the important fact that in recent times private industrialists engaged in specialised activities have voluntarily shifted their locations.

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[1] West Midlands Plan (not yet published).

What, then, of other possible causes of extra costs for the specialised industries which might be caused by industrial diversification? The most likely one is that, by increasing the demand for factors of production within specialised areas, it would raise their price. That is certainly possible. Yet the diversified industries would, by definition, demand fewer of the factors most in demand by specialised, existing industries, and more of those least in demand by these latter. For this reason, besides, the diversified industries are more likely to uncover hidden reserves of labour, and to put these to use. Specialised industries alone, too, are more prone to carry a labour surplus which is fully employed only at exceptional times than a group of mixed industries. Sometimes, in addition, it may be possible for specialised and diversified industries to make their seasonal and peak demands for labour at different times. Finally, it may be possible to draw upon spare labour from nearby districts; and, if the pace at which diversification is undertaken is restrained, it may be feasible to maintain a balance, in the individual areas, between total demand for labour and its supply.

To deal with the contention that diversification would raise costs of specialised industries by subtracting from the external economies available to them is not easy. It would seem, however, that since there need be no disturbance of these in the physical sense they could continue to function as before. In particular, the advantages of proximity to associated and related producers would remain. All the varied services requisite for the specialised industries would continue; nor need their flow be abated. For, if the diversifying industries made calls upon these—*e.g.*, for railway transport, utility services, ancillary industries, educational and training facilities—ordinarily these could be met by improved methods of utilisation or by an increase of capacity. Only if diversification were undertaken hastily and on a massive scale need damage be done to the specialised industries' external economies : and both these errors could be avoided.

As for the all-round raising of industrial costs, which, it is argued, would occur because diversification would entail a departure from the existing distribution of industrial resources throughout the country, it is pertinent to remark that besides the costs falling upon private industry the costs falling upon the community generally should be taken into account. For these latter involve the using up of resources no less than the former. Since, until the passing of the Distribution of Industry Act, 1945, private industrialists located their enterprises with less regard for the costs falling upon the community than for their own private costs, it follows that the existing distribution of industrial resources is less than optimum for both kinds of costs together. Therefore, to alter it to take account of both kinds of cost would represent movement towards that optimum. It could hardly be the case that, to change the existing distribution of resources by removing specialised, or immobile, industries from their present locations would lower the aggregate of both kinds of cost. For such removals would probably increase private costs and costs falling on the community as well. Private costs of specialised industries would probably be raised because the essence of specialisation is that it affords low private costs. Moreover, the productive equipment of such industries is frequently so bulky, so physically intertwined by the linkage of successive processes and so dependent for its functioning upon the presence of a complex of external economies that the costs of removing and reproducing all these elsewhere would be onerous. These findings apply besides, if in lesser measure, to immobile industries. As for costs falling upon the community, it is reasonable to expect that these would also be raised because of the necessity for duplicating all the various kinds of social equipment in the new locations.[1] Furthermore, sometimes, if not always, private industrialists would be unwilling to suffer additional private costs by moving elsewhere without compensation by subsidy, so that costs falling on the community would be enlarged by its amount. The conclusion is that diversification would not normally seek to alter the existing distribution of industrial resources by causing specialised or immobile industries to migrate.

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[1] Even if new, alternative industry substituted the specialised industry, duplication could not be wholly avoided. For this would need a different social

Diversification could, however, alter the existing distribution of industrial resources by influencing the location of non-specialised or mobile industries by causing them to go where otherwise private industrialists might not take them. Being mobile, there is a presumption that private industrialists could operate them economically in a variety of areas. Some of these areas would be those where diversification was needed. Others where it was needed would be areas in which it was less, or least, feasible for private industrialists to operate them economically. In these cases, however, it would be possible for the saving of costs falling upon the community by diversification to more than compensate the extra private costs. Suppose that such areas were not, in fact, diversified, because the diversifying industries went elsewhere instead. Instances of the costs falling to be met by the community then—enlarged if the areas in question experienced localised unemployment—are the sum of economic resources involved by the probable necessity to undertake extra, or duplicated, physical construction of many sorts elsewhere (such as additional factories, houses, roads and streets, utility equipment, public buildings and kinds of construction required to provide private services); by inadequate maintenance of social and private capital in the non-diversified areas occasioned by the decline of population resulting from labour migration to elsewhere; by the unemployment of labour not able or willing to migrate; by restrictive practices on the part of labour in the non-diversified areas owing to dread of unemployment, and a fall in its working efficiency caused by the depression in its wages; by losses due to the tendency of specialised industries in the non-diversified areas to use labour wastefully; and, possibly, by greater congestion of industry and people that might be instigated elsewhere. But the sum of economic resources saved to the community would have to be offset against the sum of losses of economic resources.

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texture and social equipment of different proportions; some specialised labour would follow the specialised industry-causing redundancy of old social equipment; and new industry would be slow to develop—making old social equipment temporarily surplus.

Instances are the physical construction (such as new factories or improvements of utility services) which might have to be undertaken if diversifying industries went to the areas in question instead of elsewhere; the additional services that might be needed by these (such as new industrial sites, training of labour, special transport facilities and the provision of amenities); and the costs of any subsidies that might have to be granted to private industrialists "steered" to the areas—to make good extra costs imposed upon them. The net balance of costs falling upon the community should then be compared with the net saving of costs to private industrialists by going elsewhere instead of to the areas in question. Only if the net balance of costs falling upon the community were smaller than the net saving of costs to private industrialists would the decision not to diversify the areas be warranted; and that is unlikely. The comparison would not be easy. It would be especially difficult to calculate costs falling upon the community—particularly because some costs would be once-for-all, while others would be continuous. Both would have to be translated into costs per annum.

This analysis serves to allay the fear that industrial diversification necessarily imposes cost disadvantages by causing maldistribution of economic resources. Generally speaking, specialised or immobile industries would remain where they are, and retain the cost advantages of those locations—or suffer cost disadvantages which are not significant. Diversifying industries, being mobile, could go to some parts of the country without suffering cost disadvantages; and to other parts without hurt to the economic interest of the country where the higher costs falling upon private industry are more than compensated by the lower costs falling upon the community.

To turn now to the criticism that a prime motive of industrial diversification is to share unemployment more equally over the various areas of the country, this may be less deserving of censure than at first appears. For unemployment shared more equally than in inter-war years may be a more bearable burden. The economic consequences of such sharing may be nil—although heavy unemployment, by lowering work-people's efficiency and morale, raises costs, and possibly after a point heavy unemployment breeds further unemployment—but the social consequences are favourable.

The earlier argument, which claimed that export would be harmed because diversification would raise costs, has been dealt with by the counter-argument given above. The further contention that, under a policy of controlled industrial location, export industries might be denied access to factors of production because diversifying industries would receive preference in the allotment of factors, calls for answer. That answer can be given only in normative terms. A government which pursues a policy of high and steady employment should not rank the needs of diversifying industries for factors above the needs of export industries for factors. Nor would it be obliged to do so. For, presumably, the supply of factors would not be exhausted by the demands alone of the export industries.

It is harder to meet the point that industrial diversification in certain towns nevertheless did not save them from experiencing serious unemployment during inter-war times. Not enough is known about such instances to warrant firm conclusions. But it would seem that what such towns lacked was sufficient demand in total for the labour available. This might be due to various causes. One may be that the diversified industries were not present in sufficient strength. Another may be that they were not sufficiently independent of the main industries. Or they may have relied too much upon local markets. Lastly, it may be that they were not expansive industries. Whatever the causes, however, the empirical argument supporting the contention under review can be met by a like argument. This refers to the much greater number of cases where, as a result of appropriate and sufficient diversification, unemployment was held below national levels during years when, in the above-mentioned cases, it was above these.[1]

To deal with more practical criticisms, to deprecate diversification because it is of least effect where the need for it is greatest is not admissible in denial of its efficacy. In such cases diversification is comparatively ineffective because there is too little of it relatively to the volume of specialised industry. If there were more, therefore, it would be more effective. To the argument that there are insufficient diversifying industries to serve every area in the country, the reply is that this does not question the principle inherent in industrial diversification—it merely cites a limiting factor.

There is more substance in the statements that the criteria for applying this principle have not been established, and that the means of diversifying areas so as to have regard to the economic interest of the country generally are still subject to qualification. These are subjects which might profitably engage the attention of economists—especially in view of the pronouncements of the Royal Commission on the Distribution of the Industrial Population,[1] the White Paper on Employment Policy,[2] the Distribution of Industry Act, 1945, and the Town and Country Planning Acts, 1947. Something is said on this matter later.

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[1] To select instances from different geographical areas, mention may be made of Bristol, Gloucester, Reading, Exeter, Slough, Watford, Luton, Birmingham, Wolverhampton, Northampton, Nottingham, Leicester, Shrewsbury, Manchester, Leeds, Halifax, Doncaster, Darlington, Edinburgh and Perth.

The chief positive arguments for industrial diversification may now be stated. The first is the need to counteract the abnormal industrial specialisation of certain areas. The central reason is to prevent damage—perhaps serious and irrevocable damage—to the economy of those areas arising from cyclical contractions of demand, or export fluctuation or the decline of predominant industry. The most effective remedy—the maintenance of a high and steady level of national economic activity—may fail to generate enough demand for the products of the specialised industries in question, such as shipbuilding, marine engineering, cotton and tinplate. This remedy may therefore not avail to prevent localised unemployment in specialised industrial areas. Other remedies, such as expenditure upon local public works or specific subsidies, may be economically less meritorious than industrial diversification. The assertion, made previously, that this latter would not be effective against a downward cyclical movement or general economic depression cannot be pressed without qualification; for neither affects every type of industry equally. Some types, indeed, are relatively immune; and these include industries lending themselves to industrial diversification. Another reason, but a minor one, is to mitigate marked seasonality of output and employment in areas of high specialisation—*e.g.*, coal-mining and the manufacture of motor vehicles.

The necessity to secure flexibility in the economic system of this country constitutes a powerful argument for industrial diversification. It has been referred to by Prof. W. A. Lewis in a recent article.[3] Such flexibility may be more—possibly much more—essential in future than during recent decades. For the inevitable diversion of more industrial resources to foreign trade will enjoin that these resources should be able to move into different uses as the nature, composition and size of foreign trade alter. Certainly, they require to be more flexible than those devoted to domestic production. But, besides, some resources used in domestic production may at times have to be adapted to production for export, or to take the place of discarded or unobtainable imports. Moreover, the production of goods for export may have to embrace a wider range of goods in future, and to be spread more widely over the country than in the past, thus requiring adaptability to changes of production in more places.

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[1] Cmd. 6153.

[2] Cmd. 6527.

[3] *The Manchester School of Economic and Social Studies*, Vol. XVI, No. 2, p. 162.

Success in sustaining a high general level of employment will call for the ability to transfer resources from one sort of use to another. More specifically, particular areas that come to suffer localised unemployment for any reason—such as the downward secular trend of the dominant industry or misfortune encountered by the principal firm—may have to rely upon diversification as their main, or even sole, remedy.

The possibility of technological innovation, sometimes rather far-reaching and quick, may not be ruled out; and that would give rise to changes in the uses and the ratios of factors of production. On the other hand, high general employment, insufficient or badly distributed housing, substantial social-service benefits available over the entire national area, the increased practice of determining wages upon a national basis, the rise in the average age of the working population and opposition to massive migration—especially by the inhabitants of Development Areas once bitten, twice shy—may restrain geographical mobility of work-people. Industry may therefore have to go to work-people more than it did before the war.

Industrial diversification would assist the transfer of productive means between varying uses, since it would lessen the necessity to move them over long distances. Generally speaking, the more extensive the range of industries in particular areas the easier it would be to change over production. Moreover, time would be saved. Diversification would be outstandingly useful in coping with labour thrown out of work but not willing or able to take the geographical strides to regain employment elsewhere. For it makes use of the knowledge that work-people change their industry more readily than they trek elsewhere. It would also breed that variety of working ability and resilience of occupational quality that would be required, but would not otherwise be forthcoming, when output in specific areas had to be altered. Correctly selected, diversifying industries may provide the growing points needed by districts suffering depression or sub-normal rates of growth—giving them that degree of industrial flexibility without which they would persist in the doldrums.

To use more fully the productive resources that this country has,' and to use them more efficiently—thereby saving costs—are both desirable. Thus, it is desirable that work-people who have industrial capacities that are not effectively utilised by specialised industry in the various regions of the country should be enabled to put these to better use. Again, it would be advantageous to provide opportunities for employment for persons not able to find work because sufficient variety of industry does not exist locally—such as women (sometimes men), girls (sometimes boys), older persons and work-people suffering from industrial disability or disease which prohibits continuance in their former employment. In some areas it would appear that labour not absorbable by primary industry presses into secondary industry.[1] It might be preferable to economise labour in this latter by creating more openings in other primary industry. It would be a gain if the tendency of specialised industry to use labour prodigally (by maintaining a labour reserve, and by being relatively immune from competition by other users of labour because it is the largest buyer) should be counteracted. Where there is congestion of industry and population which causes resources to be spilled in overcoming it—*e.g.*, in slower transport of goods and longer travel to work, and as a result of diminishing returns to other services—there would be advantage in thinning that congestion. Lastly, where present locations of industrial firms impose costs upon the community which exceed the differential gain to private industry of these over alternative locations, movement of firms to the alternative locations would reduce aggregate costs. All these advantages are capable of being secured, in varying degree, by means of industrial diversification.

Lastly, the appropriate practice of industrial diversification would attack the waste of resources that characterised the inter-war years by restricting the duplication in certain parts of the country of private and social capital equipment already in existence elsewhere. That came about, in large measure, because new or expanding firms frequently avoided going to areas where economic depression caused such capital equipment to be spare or under-used, and moved instead into areas where it was already more or less fully utilised. It also came about because persons and local authorities in a number of areas containing specialised industries miscalculated the capacity of these to grow and provided capital in excess of needs, meanwhile causing new industry to go elsewhere by preferring to rely upon the old industry. Lastly, it was due to the transfer of existing firms from areas of lesser to areas of greater industrial and human concentration. Enlightened and suitable industrial diversification, by steering new and expanding firms to areas having spare, or under-used, private and social capital, by checking undue reliance upon specialised industry in particular areas and by preferring locations in non-congested areas, could reduce duplication.

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[1] Cf. the substantial differences in the ratio of secondary to primary employment that are found in different areas. Doubtless there are many causes of these divergencies; but it is observable that, when primary industry fails to expand as fast as the working population, secondary employment tends to increase.

What verdict is arrived at by a consideration of the arguments for and against industrial diversification ? It is that the arguments in favour prevail. While this conclusion rests on the balance of all the arguments, it is fundamentally based on the conception that maximum industrial specialisation represents an inferior use of resources compared with industrial specialisation tempered by industrial diversification.

III

This finding having been expressed, a few suggestions may be made concerning the practice of the policy of industrial diversification. First, if, as is to be assumed, it is fostered by the State, care should be taken that industrial diversification is not carried too far. The danger of doing so is a real one. For the demand to be diversified, as a means of insurance against local unemployment, emanates from most local authorities and local communities. The State may find it difficult to resist claims that have little or no economic justification. Moreover, in the absence of an accurate measure of industrial diversity, to be certain of success there may be a tendency to overdo the introduction of alternative industry. Lastly, inevitable uncertainty about future economic conditions—and especially about the future of important industries—may conduce to a similar outcome.

The criteria by means of which to determine the need for diversification, its volume and appropriate types call for further study. There may be broad agreement about essentials, but not on particular aspects. For example, of two local areas, one of which is specialised mainly to export, and the other to capital goods, which is the more in need of diversification ? Initially, the answer may be the former. But this may produce goods the demand for which is comparatively inelastic—even during cyclical downturns; while the latter may be extremely committed to supplying goods the current demand for which is swollen by war-time destruction but the replacement demand for which is low. Conversely, the export area may be at present enjoying a boom in the demand for its consumption goods, but in future may find that its high costs, buttressed by a rigid economic structure and out-moded capital equipment, cause a collapse in foreign demand. But the area making capital goods may be supplying domestic demands for a product formerly imported but at present produced at competitive cost, and later able to be produced in this country at costs below those of foreign suppliers. Moreover, the former area may be capable of benefiting to no more than an inconsiderable extent from general measures to maintain a high level of domestic employment, while the latter may be capable of benefiting considerably therefrom.

Again, what of the need to diversify districts engaged predominantly in coal-mining? One extreme view is that, once the coal is exhausted, or mining costs become diseconomic, such districts become moribund and should not receive alternative industry. Another extreme view is that alternative industry should fully absorb the labour discharged from the mines and also future accretions of population unable to find employment in coal-mining. Neither view is likely to satisfy economic considerations. The first view probably under-estimates the costs falling upon the community; the second probably over-estimates these. Again, the first view probably assumes that all coal-miners are mobile—even over long distances; the second probably forgets that, even assuming the existence of the normal proportion of physically disabled and old miners, labour mobility within the coal-mining industry does exist. As a result, some, at least, of the miners thrown out of work in one district will move to other pits within travelling distance. (A number of Lanarkshire miners have recently moved farther—to Fifeshire.)

To take another case, should all one-industry towns be diversified? The naïve view may favour this. But some one-industry towns promise to maintain greater stability of output and employment than others—because the demand for some products is more inelastic than for others; because the industry in certain towns may gain by imperfect competition (*e.g.*, product differentiation), while that in others may be vulnerable to severe competition; or because in some one-industry towns there may be real diversity within the industry but not in other such towns.

Finally, should districts that are predominantly agricultural be "balanced" by a modicum of industry? One school of thought, by projecting the present situation of agriculture into the long-term future, may oppose the injection of industry into agricultural districts; another school of thought may take quite a contrary view.

All that has been said above relates only to the question of whether or not to diversify. When that has been settled there still remain for determination the problems of how much, in what order and of what sort? It is apparent that these are not easy to solve. Nor are these the only practical issues which have to be met and dealt with; for the technique, or methods, of industrial diversifications profoundly influence the possibilities of its success. Something may now be said about these matters. The answer to the question of how much diversification turns, mainly, upon the needs for it of different types of area. Those areas which are most vulnerable to localised unemployment—*e.g.*, export areas, areas heavily committed to capital goods and areas extremely dependent upon a narrow range of industry—need more diversification than others. Those with larger labour forces in such vulnerable industries plainly need more than those with smaller labour forces. Areas containing industries which are less capable of benefiting from national measures to combat unemployment have claims for a fuller measure of diversification than those which are more capable of receiving benefit. In some parts of the country labour is less fully utilised—because of lack of employment opportunities, or under-employment—than in others; and they have superior claims. In others again, the aggregate of private and community costs is lower than in districts where either of these much exceeds the other; and the former parts of the country should be diversified in fuller measure.

The order of treatment by diversification is mainly determinable by considerations of the sort just mentioned. But the time factor in vulnerability to localised unemployment needs to be taken into reckoning as well. For the process of effecting the industrial diversification of an area is inevitably slow. This suggests that areas needing more of it, absolutely, should be preferred to those needing more of it, relatively. Again, areas that are likely to endure unemployment of longer duration have stronger claims for early attention than areas where unemployment promises to be acute rather than chronic.

The question of what sort of diversification poses difficulties. But, plainly, the alternative industries to the main ones should be suited to the industrial capacities of the work-people they are intended to employ.[1] For example, shipbuilding workers rendered surplus by reduction in shipbuilding will need employment for males of a constructional kind; but surplus cotton workers would be largely females who might readily be transferred to quite complex forms of lighter engineering. Furthermore, the alternative industries should ordinarily differ in type from the main or specialised industries. Thus, they should differ in their cyclical movement and amplitude, and serve different markets. If the principal local industries promise to contract, the diversifying industries should be capable of achieving expansion.

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[1] Vide Tress, *The Manchester School*, Vol. IX., No. 2, p. 143.

As for the technique, or methods, of diversification, the readiest, and the most facile, way of achieving it is by the self-diversification of specialised firms already existing in an area. That could be done by adapting products so as to serve the needs of varying markets, or by adding new products with new markets. Where this method is not feasible, less economic disturbance may result if diversification is brought about by means of new firms or expansions of suitable old ones rather than by the physical shifting of firms already located. But in areas where industry is congested, where labour is in very short supply and where it is desirable to reduce population, some transfer of industry elsewhere may not be avoidable. Where, however, such transfer takes place, care should be taken that the gain from diversification in the receiving area is not outweighed by the loss from reduced diversification in the losing area. Moreover, the locational needs of both transferred industries and new and expanded ones should be recognised—especially those of them that are less mobile. This does not conflict with the dictum stated earlier that both the costs falling upon private industry and upon the community should be reckoned jointly. But it would be wrong to assume that where the costs to private industry are least, the costs for the community are most; and vice versa. Data are needed about both kinds of cost, so that both can be regarded in reaching decisions about location. To help business firms in their search for, and assessment of, locations it is useful for a central government department to provide relevant information accumulated by its research agency—experience in the working of the Distribution of Industry Act, 1945, demonstrates this. Moreover, it is for a government department to calculate costs falling upon the community, since necessarily it is best fitted to do so. On the important matter as to the speed with which diversification should be carried out, mistakes are likely to be fewer if it is not hurried; for time is needed to weigh all pros and cons and to adapt the means available to the ends desired. Besides, since it has been argued above that more reliance should be placed upon new industry and expansions of old than upon deliberate industrial transfer, the pace must be adjusted to that at which new industry and expansion of extant industry occur. Furthermore, to proceed too quickly might involve disturbance to current economic activity of an avoidable kind. Finally, not only the technique of diversification, but also its economic aspects and its social effects, need further study.

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ECONOMICS AND THE SOCIAL SCIENCES[1]

THE problem that this paper is concerned with is somewhat narrower than the title suggests. To begin with, I shall be concerned with the relationship between economics and the social sciences only from the point of view of the economist. The interdisciplinary problem will be discussed, in other words, from the vantage point of the economist rather than from that of the sociologist, the anthropologist or the psychologist. Secondly, "economics," as the term is used in this paper, is intended to refer to what may be best described as "orthodox economics." Since by orthodox economics we customarily refer to the theoretical systems of the classicists, the praxeologists, the general interdependence economists and finally the neo-classicists and the aggregative economists, the discussion will not be concerned with two schools of thought which from some points of view may be as significant as the orthodox. I am referring, of course, to the Marxists and the institutionalists. Although, in view of space limitations, this omission is mandatory, it is a regrettable one in so far as the methodological relationship between Marxian or institutional economics and the other social sciences is significantly different from that prevailing between the latter and orthodox economics.

Closer consideration of the problem of the relationship between economics and the other social sciences makes it amply clear that its correct formulation depends on the successful solution of a somewhat different problem, namely the problem of the empirical relevance of economics. It should be obvious, for instance, that, if economics is structured as a pure science while the other social sciences are structured as empirical sciences, the very question of a relationship between them becomes irrelevant. Since the implications of this proposition are important for all that follows, I should like to dwell briefly on one or two variants of what may be called "pure economics." In order to make the discussion more effective, we must consider briefly the nature of pure sciences.

Pure sciences are tautological in character. Theorems, derived from postulates through entailment or logical implication, are necessarily true, *if* the postulates are true. The theorem merely re-asserts what was already implied in the postulates. Nothing objectively new is asserted, though " its content may well be *psychologically new* in the sense that we were not aware of its being implicitly contained in the postulates."[1] Theorems of axiomatised deductive systems, therefore, can never come into conflict with reality. Their certainty, however, is purchased at very high cost, since they are devoid of any factual meaning.

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[1] This paper represents the substance of an address given at the 1950 meeting of the Midwest Economic Association.

It is well known, of course, that a pure science can be transformed into an empirical one under certain conditions. The transformation of pure geometry into physical geometry is a case in point. The process in this case involves two steps. First, the primitives, the concepts, that is, for which no definitions are provided within the axiomatic system, are epistemically correlated[2] to operationally defined concepts with empirical content. As soon as this is done, the postulates take on truth-value, they may be considered, that is, as being either true or false. Secondly, we must engage in a process of confirmation of the postulates. This, however, is a rather arduous process fraught with the danger of error. Essentially it involves the derivation of operationally meaningful theorems[3] from the postulates which can be tested against the facts. If the observations do not contradict the operationally meaningful hypotheses, we may accept the theory provisionally. If the facts contradict them, the theory has been disconfirmed. In such a case we must turn to axiomatic systems which are founded on different postulates in the hope that a theory not inconsistent with the observations will emerge. Although it is not claimed that this is the only procedure available for transforming a pure into an applied science, it must be asserted that all empirically relevant hypothetico-deductive systems resemble this pattern from at least a structural point of view.

An outstanding example of an economist who does not attempt to confirm his theory either via direct confirmation of the postulates or via indirect confirmation through verification of deductively derived theorems is provided by Ludwig von Mises. In his recent book on *Human Action* he states that

> " The scope of praxeology is the explication of the category of human action. All that is needed for the deduction of all

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[1] C. G. Hempel, " Geometry and Empirical Science," in Herbert Feigl and Wilfrid Sellars, *Readings in Philosophical Analysis*, New York, Appleton-Century-Crofts, Inc., 1949, p. 241.

[2] For a definition of epistemic correlation see F. C. S. Northrop, *The Logic of the Sciences and the Humanities*, New York, the Macmillan Company, 1947, pp. 119–32.

[3] For a definition of the concept of " operationally meaningful theorems " see P. A. Samuelson, *Foundations of Economic Analysis*, Cambridge, Harvard University Press, 1947, pp. 3–6.

> praxeological theorems is knowledge of the essence of human action. It is knowledge that is ours because we are men; no being of human descent that pathological conditions have not reduced to a merely vegetative existence lacks it. No special experience is needed in order to comprehend these theorems, and no experience, however rich, could disclose them to a being who did not know a priori what human action is. The only way to a cognition of these theorems is logical analysis of our inherent knowledge of the category of action. We must bethink ourselves and reflect upon the structure of human action. Like logic and mathematics, praxeological knowledge is in us; it does not come from without." [1]

Mises's a prioristic position coupled with the complete lack of any traces of confirmation procedures must needs lead us to the conclusion that his system is empirically irrelevant.

A somewhat more sophisticated approach also leading to pure theory construction is much more popular with economists, and finds a rather elaborate expression in Professor Robbins's *Essay on the Nature and Significance of Economic Science.*[2] Since the conceptual framework that underlies Robbins's analysis is generally employed by both pure and empirically relevant economics, it seems desirable to state it as explicitly as the limitations of space permit. I am referring to the framework of human action. In the words of Talcott Parsons [3]

> " The first salient feature of the conceptual scheme to be dealt with lies in the character of the units which it employs. . . . The basic unit may be called the ' unit act ' . . . an ' act ' involves logically the following : (1) It implies an agent, an ' actor.' (2) For purposes of the definition the act must have an ' end,' a future state of affairs toward which the process of action is oriented. (3) It must be initiated in a ' situation ' of which the trends of development differ in one or more important respects from the state of affairs to which the action is oriented, the end. This situation is in turn analyzable into two elements : those over which the actor has no control . . . and those over which he has such control. The former may be termed the ' conditions ' of action, the latter the ' means.' Finally (4) there is inherent in the conception of this unit, in its analytical uses, a certain mode of relationship between these elements. That is, in the choice of alternative means to the end, in so far as the situation

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[1] Ludwig von Mises, *Human Action*, New Haven, Yale University Press, 1949, p. 64.

[2] Lionel Robbins, *An Essay on the Nature and Significance of Economic Science* (Second Edition), London, Macmillan and Company, 1935.

[3] The Talcott Parsons rather than some other formulation of the framework is selected because, in the judgment of the author, it is by far the best available in the literature.

> allows alternatives, there is a 'normative orientation' of action."[1]

As soon as we postulate that the norm relating means to ends is that of *intrinsic rationality*,[2] the maximisation of a utility index is implied, and the foundation stone of economic analysis has been laid. Attacks against the postulate of intrinsic rationality on the grounds that it implies the postulation of the economic man or the hedonistic calculus were certainly justified in the case of a number of early, defective formulations of the theory. The construction in its present form is entirely beyond the reach of criticisms on this plane. In its most developed form the postulation of rationality implies the following : (*a*) individuals have well-ordered preference systems; (*b*) each individual's preference system is substantially independent of the other economic variables; (*c*) each individual acts to maximise his utility index.

For Lionel Robbins the postulation of intrinsic rationality as the norm which relates means to ends has a firm empirical basis. The postulate itself is directly confirmed by introspection. If we were to raise the objection that introspection does not lead to propositions of public validity, it could indeed be argued that we could establish the postulate by subjecting it to intersubjective tests. According to Professor Duesenberry, for instance,

> " Our evidence on this question is not confined to introspection. Each of us is equipped with a body of observations on the behavior of other people which confirms the idea that everyone has a well-ordered preference system at every moment. Moreover, we can confirm our interpretation of overt behavior by discussing tastes and differences in tastes. There is enough information to confirm us in our belief that the concept of a preference field is a meaningful one. Thus the utility theory, in its modern form at any rate, is not a remnant of an out-moded psychological theory as some have maintained, but has an empirical basis."[3]

The only basis, in fact, for rejecting the postulate would consist in the discovery that human behaviour is (*a*) strictly or primarily random, (*b*) " irrational " in the sense that it is inconsistent, (*c*) instinctive, (*d*) strictly traditional. In so far as the presence of a " deliberative process " can be confirmed, the essence of the rationality or the maximisation postulate must be accepted.

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[1] Talcott Parsons, *The Structure of Social Action*, Glencoe, Illinois, The Free Press, 1949, pp. 43–4.

[2] Intrinsic rationality may be contrasted to symbolic rationality. For an analysis of the concepts the reader is referred to Parsons, *op. cit.*, pp. 200–18.

[3] James S. Duesenberry, *Income Saving, and the Theory of Consumer Behaviour*, Cambridge, Harvard University Press, 1949, pp. 12–13.

The claim that Robbins's approach also leads to pure theory, however, rests on the grounds that no statements about empirical reality are derived (at least by Robbins) [1] from the postulate which could conceivably make a difference about reality, which, in other words, could conceivably be refuted. This very weakness of the theory from the point of view of empirical relevance has been praised by some as a unique contribution to the method of empirical science. Northrop, for instance, proclaims that

> " But if the method of obtaining publicly valid theory in contemporary economics has rendered the indirect experimental testing of that theory through its theorems impossible, it has also made it unnecessary. By restricting itself to the generic properties of the introspected valuations, *economics has accomplished something unique in the method of empirical science ; it has attained deductively formulated theory which is empirically verified directly through its postulates without the need of appeal to their deductive consequences.*" [2]

Far from being a source of pride, this is considered a decisive shortcoming by the modern economist who aspires to make economics an empirical science in the sense of a theory which yields theorems which could conceivably make a difference. On these grounds we must decide that Robbins's method leads to pure theory and only pure theory.

It must be made clear, nevertheless, that this shortcoming is not inherent in the action framework of analysis. It has become abundantly clear that adept manipulation of the maximisation postulate (plus some other important modifications which will be discussed below) can turn the theory into a source of a number of operationally meaningful theorems. The recent contribution of Professor Samuelson in his *Foundations of Economic Analysis* is a case in point. According to Samuelson

> " It is hardly enough . . . to show that under certain conditions we can name enough relations (equations) to determine the values of our unknowns. It is important that our analysis be developed in such terms that we are aided in determining how our variables change qualitatively or quantitatively with changes in explicit data. Thus, we introduce explicitly into our system certain data in the form of parameters, which in changing cause shifts in our functional relations. The usefulness of our theory emerges from the fact that by our analysis we are often able to determine the nature of the changes in our unknown variables resulting from a designated change in one or more parameters. In fact, our

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[1] All comments on Professor Robbins's position refer to his statements in his *Essay on the Nature and Significance of Economic Science.*

[2] F. S. C. Northrop, *op. cit.*, p. 247.

> theory is meaningless in the operational sense unless it does imply some restrictions upon empirically observable quantities, by which it could conceivably be refuted." [1]

Samuelson's procedure for arriving at operationally meaningful theorems takes us to the very heart of modern economic analysis. We first establish the fact that we are confronted with n equations in n variables and m parameters. Then we transform this system of equations into a system in which the variables are explicit functions of the parameters. Our final step preceding confirmation procedures involves utilisation of the maximum postulate to arrive, whenever this is feasible, at commitments concerning the signs of the rates of change of the variables with respect to the parameters. In so far as these propositions are refutable, even though this may be feasible only under ideal conditions, we have arrived at operationally meaningful hypotheses.[2]

It should be clear, of course, that another alternative is open to us. Along more strictly econometric lines we could proceed as follows. Employing the action framework along with the rational norm postulate we can arrive at a list of theoretically relevant variables. If we then proceed to choose the functional forms to be used, we can estimate the parameters by appropriate statistical techniques. This approach, whenever feasible, leads us to quantitative results, whereas the " signs " method is necessarily restricted to qualitative results so far as the variables appearing in the equations are concerned.

Closer inspection of the two procedures just discussed reveals the fundamental methodological property of modern economics. This property lies in what may be called the " back-room–front-room " approach. The " front-room " consists of a system of equations relating operationally defined economic variables. The " back-room " consists of a conceptual scheme which, though different from that of the " front-room," is designed to impose restrictions upon the form of the equations or the list of the relevant variables, depending on whether the " signs " or the " parameters " method is employed. Economists of the Robbins class have restricted their efforts to the " back-room," whereas empiricists–statisticians became absorbed with the " front-room."

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[1] P. A. Samuelson, *op. cit.*, p. 7.

[2] This presentation differs significantly from Samuelson's in two respects: First, since this discussion has been restricted to comparative statics, Samuelson's second major source of operationally meaningful theorems, namely the stability postulate, has been ignored. Secondly, the rationality postulate in Samuelson takes the form of maximisation *or minimisation* of some magnitude, whereas in this paper reference is made only to maximisation. This is accounted for by the fact that the argument in this paper is restricted *so far* to the general problem of utility with respect to which the rational norm prescribes maximisation.

The growing consciousness of the intimate relationship between the two sectors of economic analysis is a sign that economics is on its way to maturity as a science.

We are now in a position to tackle our central problem, namely the problem of the relationship between economics and the social sciences. The principal claim of this paper is that integration must be sought in the formulation of the conceptual framework employed in the " back-room " of economics. The rest of this paper is devoted to the elaboration of this proposition.

We made the claim above that the introduction of the rationality postulate enables us to restrict the form of the relations among economic variables in such a fashion that operationally meaningful theorems may be formulated. This claim, however, exaggerates our accomplishments. If we restrict ourselves to the rationality postulate, if we make that assumption and that assumption alone, the results in terms of operationally meaningful theorems will be very puny indeed. Modern utility and consumer behavior theory is a case in point. The fundamental proposition that may be derived from the maximisation of the utility index postulate merely states that the demand functions are homogeneous of order zero in prices. Few economists would be satisfied with these results; fewer yet would consider this accomplishment adequate grounds for calling economics an empirical science. The paucity of the operationally meaningful theorems that can be deduced from the rationality postulate are due to its universality. In the words of James Duesenberry

> " The preference system analysis of consumer behaviour is a somewhat remarkable tour de force. It seems to say something about consumer behaviour without saying anything about the motivations of the consumers in question. In its present form it is a more or less deliberate attempt to sidestep the task of making psychological assumptions. It has the advantage that it allows one to avoid getting out on a psychological limb which may collapse at any moment." [1]

The very attempt of economic analysis to build a theory of universal validity, to avoid any and all psychological and sociological commitments takes it into the path of operational meaninglessness. The only way out of the impasse, the only way for arriving at an empirically relevant science is to make these commitments. This would reduce the universality of the propositions, but at the same time it would increase their range of meaningfulness. It can be seen now, however, that this can be accomplished only by utilising the findings of the other social sciences. The procedure calls, in fact, for a careful inventorying of all the tentatively valid propositions of psychology, anthropology and sociology in an effort to equip economics with the tools necessary to impose restrictions upon the relations among economic variables in order that operationally meaningful hypotheses may be formulated. Duesenberry's *Income, Saving, and the Theory of Consumer Behaviour* is an outstanding performance in this frontier territory.

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[1] J. S. Duesenberry, *op. cit.*, p. 15.

It is little known that Talcott Parsons as far back as the early thirties conceived the problem in almost exactly this form and formulated it most elegantly in his *Structure of Social Action*. Detailed reference to his work cannot be made here, in so far as his conceptual framework is so elaborate that any discussion of his propositions would take us far afield. The clear implication of Parsons's argument is that the ultimate ends, the value-system, of the society in which behaviour is studied must somehow find their place in the action framework employed in the analysis. It is not sufficient to postulate the rational norm. We must further make commitment to value-systems which are " ideally typical " in the culture under analysis. Duesenberry has attempted to do this with considerable success in the field of consumer behavior. The procedure should be extended, however, to other fields of behavior.

It is necessary at this point to turn our attention to the fact that most of the operationally meaningful theorems in economics are not derived from the postulate of utility index maximisation, but rather from the postulate of profit maximisation by the entrepreneur. It has been generally assumed (though by no means by all economists) that the profit maximisation assumption rests on the same universal grounds as the utility index maximisation assumption. Nothing could be farther from the truth. The assumption that entrepreneurs maximise profits involves us directly (though at times only implicitly) to a sociological commitment. It can be argued, of course, that since firms constitute the intermediate not the final sector of the economy, and that since money is in our society the universal means for accomplishing any ends whatsoever, profit maximisation is fully consistent and the maximisation of the utility indices in the final or the consumer sector of the economy. No doubt this is correct. Other "principles of selection," to use Professor Boulding's terminology, are conceivable, however, which are also consistent with utility index maximisation. This is especially the case when entrepreneurial activity is pursued for its own sake. It seems mandatory, therefore, that we do not consider profit maximisation as the exclusive principle of selection, but seek to discover what particular principles of selection are relevant in various situations.

'The basic conclusions of this paper may now be stated in a somewhat more precise form. It is necessary, if we wish to develop operationally meaningful hypotheses, that in the " back-room " of economic analysis we proceed with the construction of a variety of " ideal types " [1] which commit us to a greater or lesser extent to tentatively valid psychological or sociological hypotheses.[2] This will enable us to increase significantly the number of operationally meaningful hypotheses in economics, albeit it will reduce the universality of our science. In general, we shall be able to work within the framework of action and the postulate of the rational norm. Our commitment in such cases will take the form of introducing " ideally typical " ultimate ends in our system. In other cases the action framework itself may break down. We may be obligated to recognise that behavior in these cases may be best described by a model postulating instinctive or strictly traditional behavior. In still other cases we may leave our " back-room " entirely empty. It is possible, for instance, to commit ourselves directly to an empirical generalisation which will take the form of a relation appearing only in the " front-room " of our analysis. The Keynesian supply of labor function is a case in point. In general, we should extricate ourselves from the shackles of economic universalism and experiment with less general but often more useful constructions.

The social sciences may be expected to contribute to economic analysis in other ways as well. The " institutions " prevalent in a culture will obviously reduce the number of elements of the situation confronting the actor which from his point of view are means rather than conditions. Institutional patterns may, in some cases, directly enter the " front-room " of economic analysis. Legal or institutional relations are often directly introduced in the system of equations of econometric models. The maxim that the economist of our day should observe is open-mindedness towards the achievements of the other social sciences. The future of economics as an empirical science may well depend on the degree to which our generation of economists are willing to live by it.

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[1] For a discussion of the " ideal type " the reader is referred to Talcott Parsons, *op. cit.*, pp. 601–10.

[2] It should be clear that other elements of the social structure beyond societal values could be introduced into the " back-room " of economic analysis. The most outstanding additional category which could be employed in this fashion by economists has to do with the " structure of power relations." Consideration of this issue, however, is beyond the scope of this paper.

MR. HARROD'S DYNAMIC MODEL

Postulates and Theorems.

IN a famous essay [1] Mr. R. F. Harrod developed a very simple but apparently quite general model of a dynamic economic system. Within that model Mr. Harrod established two important theorems which were surprisingly specific in view of the generality of the three postulates which he advanced as the axiomatic basis of his theory:

> "(1) that the level of a community's income is the most important determinant of its supply of savings;
> "(2) that the rate of increase of its income is an important determinant of its demand for saving, and
> "(3) that demand is equal to supply." [2]

On the basis of these three postulates the following conclusions, which we may designate as theorems, were claimed to be proved:

> *Theorem* 1. There exists a rate of growth, G_w, of national income such that if that rate holds in a given period producers will maintain the same rate of growth of income in the following period if that is physically possible. "A unique warranted line of growth, [G_w], is determined jointly by the propensity to save and the quantity of capital required by technological and other considerations per unit of increment of total output." [3]
>
> *Theorem* 2. "If the aggregated result by trial and error by numerous producers gives a value for G (the rate of growth actually realized in the period under consideration) which is different from G_w, there will not be any tendency to adapt production towards G_w, but, on the contrary, a tendency to adapt production still farther away from it, whether on the higher or lower side." [4]

G_w is called the warranted rate of growth. It is *defined* "as that over-all rate of advance which, if executed, will leave entrepreneurs in a state of mind in which they are prepared to carry on a similar advance." [1] Mr. Harrod assumes that except when an increase of production, and therefore of income, is limited by "fundamental conditions" such as the size of the population or known technology, entrepreneurs will do what they are prepared to do. We may then say that G_w is defined as that rate of increase of income which, if achieved, will be continued into the future by entrepreneurs so long as they can do so.

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[1] R. F. Harrod, "An Essay in Dynamic Theory," ECONOMIC JOURNAL, Vol. XLIX (1939), pp. 14 *et seq.* The same trend of thought is presented with slight changes of notation in R. F. Harrod, *Towards A Dynamic Economics*, London, 1948. These will be referred to as *Essay* and *Towards* respectively. We shall here follow the notation of *Towards* except that the variables will be given subscripts to show to which time periods they refer.

[2] *Essay*, p. 14. [3] *Essay*, p. 14. [4] *Towards*, p. 87.

G_w depends entirely on the behaviour pattern of entrepreneurs. It is accordingly quite surprising that Harrod presents a proof not only that G_w always exists,[2] but also that it is equal to $\frac{s}{C_r}$, where s is the average propensity to save and C_r is the accelerator. That is, s is the ratio of saving to income in the period under consideration,[3] and C_r is "the value of the capital goods required for the production of a unit increment of output." [4]

Having defined G_w, it remains to be proved that it exists under any particular conditions. Whether or not G_w exists is a matter of fact; it is quite possible that there is no rate of growth of income such that it will leave entrepreneurs in the frame of mind to continue that rate of growth of production. Harrod's first proposition is that G_w, a characteristic of the behaviour of business-men, exists and is equal to the ratio of two terms, one of which is a characteristic of the behaviour of savers, and the other is a technological characteristic of production.

Harrod assumes that the production of any period, up to the limitations imposed technologically, is determined by the decisions of entrepreneurs. Suppose that their decision as to how much to produce in any period is a linear function of income levels of the past n periods. There will not in general exist a real positive rate of growth G_w such that if it was sustained over the last n periods, it will then hold in the $(n + 1)$th period as well. For such a rate to exist, the coefficients of the function relating current to past incomes must satisfy certain conditions.[5]

Thus consider a dynamic model involving the interaction of the accelerator and propensity to consume of the sort discussed by Samuelson :[1]

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[1] *Towards*, p. 82.

[2] *Essay*, paragraphs 4 and 5.

[3] Harrod usually assumes that s is the ratio of the saving of the current period to the income of the previous period.

[4] *Essay*, p. 16. Harrod recognises elsewhere that C_r must be given a time dimension.

[5] See my article "The Accelerator as a Generator of Steady Growth," *Quarterly Journal of Economics*, Vol. LXIII, May 1949, for a discussion of these conditions.

$$Y_t = (1 - s)Y_{t-1} + C_r(Y_{t-1} - Y_{t-2}) \quad . \quad . \quad (1)$$

In this equation Y_t, as usual, represents income of period t, and s and C_r are the propensity to save and the accelerator as in Harrod's model. An equation of this form is usually interpreted as indicating that the income-determining expenditures of the tth period depend on the income and the change of income of the previous period; that is, that it takes one period for the expenditures related to a given income in the case of consumption, or a given change of income in the case of investment, to go through the economic system and once again become income. But we may if we like read equation (1) as giving the rule for the behaviour of entrepreneurs, that they will cause to be produced in period t an amount equal to the expenditure for consumption out of the income of the period $(t - 1)$ plus the amount of investment justified by the increase of income in period $(t - 1)$ over that of period $(t - 2)$.

Suppose that $s = 0{\cdot}1$ and $C_r = 1{\cdot}5$. Then equation (1) implies an explosive cyclical pattern and there is no steady rate of growth G_w, such that upon substitution of $Y_0 = 1$, $Y_1 = 1 + G_w$ in equation (1), the equation will yield $Y_t = (1 + G_w)^t$.[2] Whatever rate of growth, G, is tried in (1) by setting $Y_{t-1} = (1 + G)Y_{t-2}$, the resulting value of Y_t will be less than $(1 + G)Y_{t-1}$, so long as $(1 - s + C_r)^2 < 4C_r$.

How then does Harrod prove the proposition that G_w exists and that it is equal to $\frac{s}{C_r}$? He starts with an identity :

$$G_t \equiv \frac{s_t'}{C_t} \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (2)$$

in which all the terms are measured *ex post*,[3] that is, G_t is the rate of growth that has actually occurred in period t, C_t is the ratio of increment of capital (net investment) to increment of income actually experienced, and s_t' is the ratio to income of the $(t-1)$th period of saving that has actually been made in period t.[1]

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[1] Paul A. Samuelson, "Interactions between the Multiplier Analysis and the Principle of Acceleration," *Review of Economic Statistics*, Vol. XXI, No. 2, May 1939, pp. 75–8; reprinted in *Readings in Business Cycle Theory* (Blakiston), 1944.

[2] Proof: If this were so then $x = 1 + G_w$ would be a root of $x^2 - (1 - s)x - C_r(x - 1)$. But the roots of that polynomial are complex when $(1 - s + C_r)^2 < 4C_r$.

[3] Harrod's notation has been slightly modified in order to preserve the distinction between measurements *ex ante* and *ex post*.

That (2) is an identity follows from the following definitions :

Definition 1. *ex post* saving ≡ *ex post* investment so that

$$s_t' \cdot Y_{t-1} \equiv C_t(Y_t - Y_{t-1}) \quad . \quad . \quad . \quad . \quad (3)$$

Definition 2.

$$G_t \equiv \frac{Y_t - Y_{t-1}}{Y_{t-1}} \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (4)$$

Dividing both sides of (3) by C_tY_{t-1} we get

$$\frac{s_t'}{C_t} \equiv \frac{Y_t - Y_{t-1}}{Y_{t-1}} \equiv G_t \quad . \quad . \quad . \quad . \quad (5)$$

Harrod assumes as a matter of fact that *ex post* saving equals *ex ante* saving so that $s_t' = s$. This assumption is a substitute for Postulate 3 for it tells what happens when demand for and supply of saving are not equal. From this assumption and (5) we get

$$G_t = \frac{s}{C_t} \cdot \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (6)$$

Now comes the crucial step in the proof so let us have it in Harrod's exact words :

> " If the value of the increment of stock of capital per unit increment of output which actually occurs, C_t, is equal to C_r, the amount of capital per unit increment of output required by technological and other conditions . . . then clearly the increase which actually occurs is equal to the increase which is justified by the circumstances. This means that, since C_t includes all goods (circulating and fixed capital), and is in fact production minus consumption per unit increment of output during the period, the sum of decisions to produce, to which G_t gives expression, are on balance justified—*i.e.*, if $C_r = C_t$ then $G_t = G_w$ and (from (6) above) $G_w = \frac{s}{C_r}$." [2]

The first statement that if $C_t = C_r$ the investment was justified may be regarded as a definition of the term justified. The second statement is also definitional, that if the investment actually made is the amount that is justified, then the total amount of goods produced will have been justified.

So far the argument is merely definitional. The critical question is why does $C_r = C_t$ imply $G_t = G_w$? That means that if the decisions to increase output from last period to this one were justified, new decisions will be made to continue the same percentage rate of growth into the next period. This need not be so, and it is an important characteristic of Mr. Harrod's model that he assumes that it is so.

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[1] Note the peculiar timing that relates saving in period t to the income of the previous period. In this I follow Harrod (*Essay*, p. 18). Later we shall consider the effect of changing this assumption as to timing.

[2] *Essay*, p. 18. Subscript notation changed from original.

Let us temporarily assume that it is not so, that the behaviour of entrepreneurs is such that if this year's production decisions are justified (giving to that term the meaning Mr. Harrod attaches to it) next year's production will equal this year's production. Under this assumption if G_t is a justified rate of growth not equal to zero, then G_t cannot be a warranted rate of growth since by our temporary assumption, if G_t is justified, $G_{t+1} = 0$ and for G_t to be a warranted rate of growth it must, by definition, be followed by $G_{t+1} = G_t$. Our temporary assumption of entrepreneurial behaviour accordingly contradicts Mr. Harrod's proof.

Therefore, the postulate, that if G_t is justified $G_{t+1} = G_t$, is essential for Mr. Harrod's proof. This postulate is much more restricted than the general postulates advanced by Harrod, and helps explain how Mr. Harrod got such specific conclusions from such general postulates. In fact, Mr. Harrod did not use his general postulates at all, but implicitly substituted for them the following set of more highly restricted postulates :

> *Postulate* 1*a*. *Ex ante* saving in period $t = sY_{t-1}$.
>
> *Postulate* 2*a*. The justified investment in period $t = C_r(Y_t - Y_{t-1})$.
>
> *Postulate* 3*a*. *Ex post* investment = *ex ante* saving.[1]
>
> *Postulate* 3*b*. If investment *ex post* is justified in any period, entrepreneurs will (unless prevented by physical limitations) in the succeeding period increase production in the same proportion as it has just been increased. If in any period investment *ex post* is less than the justified investment, entrepreneurs will in the next period increase the rate of growth of production, and vice versa.

Let us denote the difference between justified investment and *ex post* investment in the *t*th period as U_t. Then by Postulates 1*a*, 2*a* and 3*a* :

$$U_t = C_r(Y_t - Y_{t-1}) - sY_{t-1} \quad . \quad . \quad . \quad . \quad (7)$$

Postulate 3*b* can then be expressed as

$$G_{t+1} = G_t + F(U_t) \quad . \quad . \quad . \quad . \quad . \quad (8)$$

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[1] **As noted below, this is not a necessary assumption for Mr. Harrod's model, but it was adopted for simplicity of exposition.**

where F is any function which is positive, negative or zero according to whether U_t is positive, negative or zero. From this definition of F it follows from (8) that $G_{t+1} = G_t$ when and only when $U_t = 0$, and $U_t = 0$ is then a necessary and sufficient condition for a warranted rate of growth, a rate such that if realised in period t, it will again be realised in period $t + 1$.

Mr. Harrod's first theorem can be immediately demonstrated by noting that $Y_t = Y_0\left(1 + \frac{s}{C_r}\right)^t$ upon substitution in (7) yields $U_t = 0$. Therefore if Postulates 1*a*, 2*a*, 3*a* and 3*b* hold there does exist a warranted rate of growth $G_w = \frac{s}{C_r}$.

Mr. Harrod's second or instability theorem, states that if $G_t \neq \frac{s}{C_r}$, then G_{t+1} will be farther from $\frac{s}{C_r}$ than was G_t.[1] Suppose $G_t = \frac{s}{C_r} + b$; then by definition (2) $Y_t = \left(1 + \frac{s}{C_r} + b\right) Y_{t-1}$, and from (7) it may be seen that $U_t = bC_rY_{t-1}$. If as we usually assume C_r and Y_{t-1} are positive, U_t will have the same sign as b. By Postulate 3*b*, $F(U_t)$ has the same sign as U_t. Then by (8), G_{t+1} will be greater or less than G_t if b is greater or less than zero respectively. Therefore if G_t differs from $\frac{s}{C_r}$, G_{t+1} will differ more, so that successive G's will depart farther and farther from $\frac{s}{C_r}$.

Although Postulates 1*a*, 2*a*, 3*a* and 3*b* completely specify Mr. Harrod's model, except for the exact shape of $F(U_t)$, a more general set of postulates might have specified the same dynamic system. As Mr. Harrod has observed,[2] his particular assumption that *ex ante* savings = *ex post* savings is not essential to his system. We may accordingly make Mr. Harrod's system somewhat more general by substituting the concept of *ex ante* investment for that of justified investment.

Leaving Postulate 1*a* unchanged we may form the extended Harrod model by substituting the following two postulates for Postulates 2*a*, 3*a* and 3*b*.

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[1] A dynamic system is frequently said to be unstable when it does not approach a limiting value as time goes on. From this point of view continued growth, however steady, is unstable. But in the present analysis we may define a different concept of instability which we may call instability in the Harrod sense. Given a warranted rate of growth G_w, if over a certain range of G_t when $G_t \neq G_w$, then $|G_{t+1} - G_w| > |G_t - G_w|$, the growth rate is unstable in the Harrod sense over the specified range of G_t.

[2] *Essay*, p. 21.

> *Extended Postulate 2b. Ex ante* investment in period $t = C_r(Y_t - Y_{t-1})$.
>
> *Extended Postulate 3c.* If investment *ex ante* = saving *ex ante* in period t, the rate of growth of income in period $t + 1$ will equal the rate of growth in period t. If *ex ante* investment exceeds *ex ante* saving in period t, the rate of growth of income in period $t + 1$ will be larger than that of period t, and vice versa.

Postulates 1*a*, 2*b* and 3*c* lead to exactly the same dynamic model as did Postulates 1*a*, 2*a*, 3*a* and 3*b*, provided U_t is redefined to be the difference between *ex ante* investment and *ex ante* saving, instead of the difference between justified investment and *ex post* investment. The two sets of postulates lead to identical behaviour of Y_t from any given initial conditions. The only difference between them relates to the intermediate mechanism which brings this behaviour about.

Mr. Harrod discusses his model almost exclusively in terms of *ex post* saving equalling *ex ante* saving, so that some who disagree on this point might have been tempted to reject Harrod's model. Mr. W. J. Baumol, in comparing the Harrod with the Samuelson model has indicated that one of the principal differences was that in Harrod's system *ex post* saving-investment = *ex ante* saving, while in a Samuelson system *ex post* saving-investment = *ex ante* investment.[1] Since the extended Harrod postulates fit exactly the same dynamic system as do the postulates actually used by Harrod we must disagree. Mr. Harrod's system is more general than the restricted assumption of *ex post* investment equalling *ex ante* saving.

None the less, the Harrod model is based on restricted assumptions much less general than the postulates originally listed (p. 724 above). What happens to Mr. Harrod's theorems if we consider postulates more general than 3*c* ?

In order to make Postulate 3*c* more general we may take a hint from Mr. Harrod's observation concerning the similarity of his model to Mr. Keynes's proposition in the Treatise that if investment exceeded saving the system would be stimulated to expand and conversely.[2] An excess of *ex ante* investment over *ex ante* saving leads to an increase in income because expenditure will then exceed income. Therefore the following may be considered as a generalised form of Postulates 3*b* or 3*c*.

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[1] W. J. Baumol, "Notes on Some Dynamic Models," ECONOMIC JOURNAL, LVIII (232), December 1948, p. 514.

[2] *Essay*, p. 19.

> *Postulate 3d.* If in the current period expenditure exceeds income produced, the rate of growth of income produced in the next period will exceed that of the current period. If expenditure is less than income produced, the rate of growth of income produced in the next period will be less than that of the current period.

In equation form this postulate leads to exactly the same dynamic model as that expressed by (8) except that now

$$U_t = E_t - Y_t \quad . \quad . \quad . \quad . \quad . \quad . \quad (9)$$

where E_t represents expenditure in period t. The other terms are as previously defined.

We may call (8) and (9) the generalised Harrod model.

The behaviour of the generalised Harrod model depends on the specific assumptions that are made concerning the dependence of expenditure in period t on the income of the current and previous periods. Mr. Harrod's own model is a particular case of the generalised Harrod model in which Postulates 1*a*, 2*a* or 2*b* specify the way in which expenditure depends on income of the current and preceding period, as expressed by (7) in conjunction with (9):

$$E_t = Y_t - sY_{t-1} + C_r(Y_t - Y_{t-1}) \quad . \quad . \quad . \quad (10)$$

Equation (10) furnishes a clue to the instability of Harrod's original system. For it says that a 1-unit increase in a period's income brings about a $(1 + C_r)$-unit increase in that period's expenditure. If in Harrod's original model a 1-unit increase of income in period t leads to more than a 1-unit increase in expenditure, why is not the model immediately unstable in period t? The relevant question now appears to be not why the Harrod model is eventually unstable, but why it is not immediately unstable. The answer lies in the assumption that Harrod has implicitly made that expenditure of period t does not affect income of period t. It does determine the rate of growth of income in the next period however. Harrod has assumed that the current period's income depends on entrepreneurial decisions based on the relation of expenditure to production in the preceding period. Therefore an increment of income of this period which leads to an even larger increment in expenditure in this period will raise the income of next period, and the expenditure of next period which will raise the income of the succeeding period, etc.

Sometimes Mr. Harrod considers the possibility that s may vary and so become large enough to stabilise his model, though only to dismiss this possibility because of the large marginal rate of saving required. But no matter how large s is it cannot stabilise the system described by equations (7) and (8), since the size of s did not enter into the proof of Theorem 2 that the system is unstable.

How then can Harrod take the view that a sufficiently large s can stabilise his system? That view implies a different timing of the relationship between saving and income than is required for the proof of Harrod's two theorems, but Mr. Harrod is not entirely consistent in his assumptions as to the timing of saving. Sometimes he implies that *ex ante* saving of period t equals sY_t rather than sY_{t-1}.[1] Under that assumption, if the marginal rate of saving is greater than C_r, the growth of Y_t can be stabilised in the Harrod sense, provided the average rate of saving is less than C_r.

A Samuelson Model.

We may contrast the generalised Harrod model of equations (8) and (9) with what we may call a generalised Samuelson model. That model is based on the assumption that income of any period equals expenditure in that period, so the generalised Samuelson model is

$$Y_t = E_t \quad . \quad . \quad . \quad . \quad . \quad . \quad (12)$$

This model is a substitute for Postulates 3*a*, 3*b* or 3*c* of Harrod's system. It says essentially that income is equal to expenditure rather than that income is determined by entrepreneurial decisions based on the behaviour of expenditure. We can easily appraise the behaviour indicated by a Samuelson model under Harrod's Postulates 1*a* and 2*b* as expressed in equation (10). Combining equations (10) and (12) we get:

$$Y_t = E_t \equiv Y_t - sY_{t-1} + C_r(Y_t - Y_{t-1}) \quad . \quad . \quad (13)$$

This equation has the solution

$$Y_t = Y_0\left(1 + \frac{s}{C_r}\right)^t \quad . \quad . \quad . \quad . \quad . \quad (14)$$

that is $G_w = \frac{s}{C_r}$ exactly as in the Harrod model. Furthermore, as in the Harrod model this solution is unstable since in (13) a 1-unit increase in income on the right-hand side will bring about a $1 + C_r$-unit increase of expenditure and therefore of income in the same period, which will bring about a $(1 + C_r)^2$-unit increase of expenditure and income in the same period and so on *ad infinitum*. Given Harrod's assumption as to the timing of investment and saving, the Samuelson model yields exactly the same results as does the Harrod model, except that the system will immediately explode in the Samuelson model, while income in the Harrod model will grow at a finite but ever-increasing rate.

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[1] This inconsistency was pointed out by Baumol, *op. cit.*, p. 507, footnote 1. If saving equals sY_t rather than sY_{t-1}, the warranted rate of growth G_w, is $\frac{s}{C_r - s}$ rather than $\frac{s}{C_r}$.

The instability in this case is induced by the dependence of investment on income of the same period.[1] If it is then assumed that investment expenditure of period t depends on the change of income of previous periods the explosive process which in the previous case was compressed within a single period will now operate only gradually from period to period.

Thus suppose we change Harrod's assumption expressed in Postulates 2*a* or 2*b* to :

> *Postulate* 2*c*. *Ex ante* investment of period $t = C_r(Y_{t-1} - Y_{t-2})$.

This differs from Postulates 2*a* or 2*b* only in that the investment effect of a change in income is lagged one period. Then

$$U_t = C_r(Y_{t-1} - Y_{t-2}) - Y_t + (1 - s)Y_{t-1} \quad . \quad . \quad (15)$$

If we substitute (15) in the general Harrod model (9) we find that there will be a warranted rate of growth only if $(C_r + 1 - s)^2 > 4C_r$. If that condition is fulfilled there will be two such rates of growth G_{w1} and G_{w2}.[2] The smaller of these will be unstable, and the larger will be stable in the Harrod sense.

Insertion of Postulate 2*c* into the Samuelson model yields similar behaviour. There is no warranted rate of growth unless $(C_r + 1 - s)^2 > 4C_r$. If that condition is fulfilled, then the same two rates of growth G_{w1} and G_{w2} that were warranted rates in the Harrod model will be components of the solution in the Samuelson model.

The similarity between the Harrod model and the Samuelson model is no coincidence. It follows from the fundamental construction of the two models. The Harrod model says that when expenditure equals income the rate of growth is continued, *i.e.*,

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[1] This has been pointed out by J. R. Hicks, " Mr. Harrod's Dynamic Theory," *Economica*, (N.S.) XVI (62), May 1949, p. 210.

[2] $$G_{w1} = \frac{C_r + 1 - s - \sqrt{(C_r + 1 - s)^2 - 4C_r}}{2} - 1$$

and $$G_{w2} = \frac{C_r + 1 - s + \sqrt{C_r + 1 - s)^2 - 4C_r}}{2} - 1$$

Note that $C_r \geqslant 4$ and $s \leqslant 1$ are sufficient, but not necessary conditions for the existence of a warranted rate of growth.

it is a warranted rate of growth. The Samuelson model simply says that income equals expenditure. But when income equals expenditure then according to Mr. Harrod's definitions and postulates the rate of growth has been justified; so what the Samuelson model says will happen the Harrod model considers as a normal development from which deviations occur. If there is a steady rate of growth that satisfies the Samuelson model it will be a warranted rate of growth in the Harrod model. If a given rate of growth is unstable in one, then it is unstable in the other. If the Samuelson model can be satisfied only by oscillating movements the same will in general be true of the Harrod model.

This similarity makes further investigation of the generalised Harrod model much easier, since we can perform our analysis on the simpler Samuelson model and carry the results over to Mr. Harrod's system.[1] The author has previously investigated the conditions under which steady growth is possible in a Samuelson model.[2] From that analysis it may be concluded that although Harrod's two theorems do depend upon the particular assumption he made about the timing of saving and investment, substantially the same theorems may be proved in the general case of current expenditures depending on past levels of income, but with some qualifications concerning the size and timing of propensity and accelerator.

In order to illustrate the manner in which the timing and size of propensity and accelerator influence the time shape of income as indicated by a Samuelson or Harrod model we may consider the following generalised system.

Suppose there are two types of expenditure in the system which we may call consumption and investment, respectively, although we are much more interested in the manner in which the two types depend on the levels of past and current income than in the objects of expenditure.

Postulate I. Consumption expenditure of time period $t = aY_{t-p}$.

Postulate II. Investment expenditure of period $t =$

$$c(Y_{t-p} - Y_{t-p-1}) + c(Y_{t-p-1} - Y_{t-p-2} + \dots + c(Y_{t-p-q+1} - Y_{t-p-q}).$$

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[1] This is essentially what Mr. Hicks has done, *op. cit.* Unfortunately Mr. Hicks assumed a highly restrictive condition on the accelerator to get the minimum rate of steady growth (p. 113). Consequently, his system is not unstable in the Harrod sense.

[2] See footnote 5, p. 725.

Postulate III. A. Samuelson model:

$$Y_t = E_t \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (12)$$

B. Harrod model:

$$G_{t+1} = G_t + F(E_t - Y_t) \quad . \quad . \quad . \quad (16)$$

(all terms as previously defined).

In these relationships we may call a the propensity to consume and c the current accelerator, p the consumption period and q the investment period. The adjoining Y's in Postulate II cancel out so that Postulate II can be written:

$$\text{Investment expenditure of period } t = c(Y_{t-p} - Y_{t-p-q}).$$

For these postulates of which Harrod's postulates can be considered a special limiting case with $p = 0$, we may state the following as the closest we can get to Harrod's theorems:

Generalised Theorem I. A warranted rate of growth, G_w, exists if and only if

$$\frac{q}{p+q}(a+c) > 1 \quad . \quad . \quad . \quad . \quad . \quad . \quad (17)$$

and

$$\frac{qc}{p} \leqslant \left[\frac{q}{p+q}(a+c)\right]^{\frac{p+q}{p}} \quad . \quad . \quad . \quad (18)$$

Generalised Theorem II. If one warranted rate of growth exists, another one also exists. The larger of the two, $\bar{G}$, which may be called the dominant rate of growth, must satisfy the condition

$$(1+\bar{G})^{p+q} \geqslant \frac{qc}{p} \quad . \quad . \quad . \quad . \quad (19)$$

The smaller (minor) rate of growth will be unstable, and the dominant rate stable in the Harrod sense.[1]

Notice that for a given a and c such that $a + c > 1$ and for given q we can, by choosing p sufficiently small, make sure that conditions (17) and (18) will be fulfilled. Harrod assumed essentially that $p = 0$ and (usually) that $a + c > 1$. Under these assumptions Harrod was sure to find steady growth possible in his system. Furthermore, as condition (19) indicates, as p gets smaller the dominant growth factor over the income plus investment period gets larger, and as p approaches 0, $\bar{G}$ increases without limit. But for $\bar{G}$ to increase without limit corresponds to Theorem 2. Therefore under Harrod's assumptions of $p = 0$ and $a + c > 1$ his two theorems are valid.

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[1] See reference of footnote 5, p. 725 for proof of these theorems.

Under more general assumptions as to the size of p and $a + c$ Harrod's theorems must be qualified. The necessary qualifications are indicated by (17) and (18). We may define C_r as the *ultimate* accelerator, the amount of additional capital required for each additional unit of production per unit of time. Of course C_r has a time dimension such that C_r for a year is 1/12 of C_r for a month and 1/52 of C_r for a week. In contrast to the ultimate accelerator C_r, is c, the current accelerator. If q is the length of the investment period then $qc = C_r$.

The interaction of propensity and accelerator and their respective timing can be related to Harrod's first theorem as follows:

> For given non-zero values of C_r, p and q, a warranted rate of growth will exist, provided a is large enough.
>
> For given non-zero values of p, q and a, a warranted rate of growth will exist, provided C_r is large enough.
>
> For given non-zero values of p, a and C_r, a warranted rate of growth will exist, provided q is short enough, and $\frac{C_r}{p} > e$, the base of natural logarithms.
>
> For given non-zero values of a, C_r and q, a warranted rate of growth will exist, provided p is short enough and $a + \frac{C_r}{q} > 1$.

The above qualifications of Mr. Harrod's Theorem 1 are important principally if the propensity to consume or the ultimate accelerator is small, or if investment is a long time being put into place relative to the income period. For example, if it should take about five years for investment to be put into place, and C_r, the ultimate accelerator on an annual basis is of the magnitude of 2, and if $a < 0{\cdot}60$ then steady growth is impossible however short the income period, for $c < 0{\cdot}40$ and therefore $a + c < 1$. It is important to note that the relevant investment period is not a decision or use period, but the length of time it takes to make the expenditures for investment induced by a given period's increase in income.

If a warranted rate of growth exists, Harrod's second theorem is substantially true for all practical purposes. Harrod found that any departure from a warranted rate of growth leads to a greater subsequent departure. We find that this is true of a minor rate of growth but not for a dominant rate of growth. But for any realistic values of the relevant constants the dominant rate of growth, when steady growth is at all possible, will be so large that for any moderate initial rate of growth the rate of growth is unstable in the Harrod sense unless stabilised by some factor not yet considered. The most promising candidate for the role of stabiliser is price.

Price as Stabiliser.

In both the Harrod and Samuelson models when rates of growth increase from a given initial rate they do so because the combined consumption and investment expenditure in each period exceeds the income produced in that or in the preceding period. But suppose increasing expenditure tends to raise prices as well as to call forth greater production. When prices rise a given increase of expenditure brings out less than a proportional increase in production. There will then be required a correspondingly smaller amount of new investment. As a result increasing prices may halt a runaway movement in the rate of growth of income and stabilise it at a moderate rate of growth, or even cause income to oscillate cyclically instead of growing steadily.[1] The remarkable feature of price as a stabiliser is that a relatively small degree of price flexibility may be sufficient to stabilise a highly explosive situation.

The manner in which price flexibility can stabilise an otherwise explosive situation can be illustrated by a simple example. Suppose there is no tendency to save whatsoever, the propensity to consume being equal to unity. Further suppose that $C_r = 2$, and the consumption and investment periods are each equal to one time unit. We may assume that the accelerator operates only on changes in real income, so that accelerator-induced real-investment expenditure of period t is :

$$C_r\left(\frac{Y_{t-1}}{p_{t-1}} - \frac{Y_{t-2}}{p_{t-2}}\right)$$

where p_t is the price level of period t. We also assume that this real expenditure is to be translated into money expenditure at prices of period $t - 1$ so that money expenditure of period t is given by :

$$E_t = Y_{t-1} + 2\left(\frac{Y_{t-1}}{p_{t-1}} - \frac{Y_{t-2}}{p_{t-2}}\right)p_{t-1} \quad . \quad . \quad . \quad (20)$$

If prices are constant, then (20) implies, in a Samuelson or Harrod model, two warranted rates of growth $G_{w1} = 0$ and $G_{w2} = 100\%$. Any initial rate of growth of real income less than 100% per year will then lead to subsequent rates of growth larger than the initial rate, *i.e.*, the model is unstable in the Harrod sense over initial growth rates of real income between 0 and 100%.

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[1] See reference of footnote 5, p. 725, pp. 188 *et seq.* for a discussion of price flexibility as a stabiliser.

If prices are not constant, however, the situation is altered. Suppose, for example, that prices respond to an increase of expenditure in the following manner. An increase of expenditure will call forth increases in prices and in real output equal to each other. Thus a 21% increase in expenditure will call forth a 10% increase in real income and a 10% increase in the price level (1·10 × 1·10 = 1·21). Under these conditions (20) will be stable in the Harrod sense. Any initial rate of increase in real income will lead to smaller subsequent rates of increase. Thus a system that is highly unstable if prices are constant becomes stable in the Harrod sense when prices vary.

Let us see what makes the difference between the two cases. Suppose as initial conditions in both cases a 2% growth in real income. With constant prices in (20) if $Y_{t-2} = 0{\cdot}9804$, and $Y_{t-1} = 1{\cdot}00$, then $E_t = 1{\cdot}0392$. The Samuelson model, (12), indicates that $Y_t = 1{\cdot}0392$, so that the initial rate of 2% leads to an immediately following rate of about 4%. In the Harrod model (8), if $Y_t = 1{\cdot}02$, we see from (9) that $U_t > 0$ so that $G_{t+1} > G_t$. Therefore we know that the initial rate of 2 % will lead to a subsequent rate greater than 2%.

Under the second assumption, that price varies with real income, we may assume as the corresponding initial conditions : $\frac{Y_{t-2}}{p_{t-2}} = 0{\cdot}9804$, $\frac{Y_{t-1}}{p_{t-1}} = 1{\cdot}00$, $p_{t-1} = 1{\cdot}00$, so that (20) yields $E_t = 1{\cdot}0392$ just as in the previous case, but this increase of expenditure of 3·92% will, according to the assumption on price behaviour, imply a price rise of 1·94% and a rise of real income of 1·94%. The initial 2% rise of real income has not been sustained. If then we repeat the procedure using any other initial rate of growth we will find that the subsequent growth of money expenditure in this model when prices change as assumed must be less than twice the initial rate of growth of real income, and when the growth of money expenditure is broken down into an equal price rise and real-income rise, the rise of real income will be smaller than the initial rise. If we tried for example a 10% initial increase of real income and price in (20) it would lead to an 18·2% increase in money expenditure, which in turn would bring about only an 8·7% increase in real income and a 8·7% rise in prices. Thus (20) in conjunction with (12) leads, under the price behaviour assumed, to a sequence of incomes such that each period's rate of growth is smaller than the preceding period's, so that the rate of growth tends towards 0.

So long then as present expenditures are based on past prices, a price rise can stabilise a rate of growth that might otherwise have led to even greater rates of growth. The familiar phenomenon of forced savings arises, buyers get less for their money than they intended to buy. If, however, the buyers refuse to be frustrated, but raise their expenditures in proportion to the rise of prices then prices cannot act as a stabiliser. If the money supply permits such behaviour there will ensue an inflationary process whose speed will be governed by the rapidity at which the spenders readjust to the new price level.

We may conclude that Mr. Harrod's theorems yield valuable insights into certain unstable relationships that can exist in an economy in which some expenditures depend on the rate of change of income. But whether a warranted rate of growth exists or not depends on the timing and magnitude of the various types of expenditure, and on the behaviour of prices. Similarly, although it seems reasonable to believe that timing and magnitude of the expenditures are such that a moderate warranted rate of growth would not be stable in the Harrod sense, yet that instability may be moderated by price flexibility if purchasers cannot or do not immediately increase their expenditures in proportion to a rise in the price level.

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SOME OBSERVATIONS ON PROBLEMS OF HILL AND MARGINAL LAND

ATTENTION has recently focused, both in Parliamentary debate and in Press discussion, on the problem of a fuller use of the hill and marginal land in this country. Such discussion usually leaves a vague impression that given goodwill, rather more effort and some minor adjustments in agricultural policy, these areas could become a large potential source of increased livestock production. Beef herds are usually mentioned, with the inference, undoubtedly true, that such an increase would serve to lighten the austerity of post-war food conditions, and contribute substantial encouragement to the precarious balance of food supplies in Europe.

This marginal problem in its entirety has been comparatively little analysed in full detail, though its importance has received much lip service.

At the root of the problem, capital and its nature, especially the peculiarities attached to agricultural capital, provide the real key to the fundamental difficulty inherent in this type of land. So closely are ecological considerations bound up with the examination and findings of the capital problem that it is difficult to say where, if at all, precise boundary lines occur between the geographical disability and economic opportunity with which the problem is so closely bound up.

Hill and marginal land comprises some 34% of the agricultural land of this country, the areas concerned providing a surprising similarity of underlying economic feature.

1. *Hill and marginal land is invariably an area of low rateable value per head.* The disability that this factor brings is one of the most noticeable social features of such areas. Disability may include inadequate or non-existent main drainage, sewage or water supplies; out-of-date and insufficient housing; old-fashioned social amenities; ill-balanced educational facilities of all types; lack of good transport services—and often lack of suitable roads to admit them—and like disadvantages.

It is an attempted remedy of these factors to which grants for marginal land improvement—distinct from producer subsidy such as hill sheep and cattle subsidy made to hill farms pursuing a definite sheep policy—subscribe. Far too often marginal grants are confused with or represented as grants to the agricultural industry as such. In point of fact they more often invade the province of local government authority, often itself contending in inadequate resource with the angular problem that low rateable value propounds, rather than agricultural provinces more precisely defined.

Owing partly to the above factors, and to others more widely social in its strict sense, marginal areas tend to a drift of population of all ages and skills towards more favoured places. In villages and the small country towns population of a retired age group tends to replace them numerically and less skilfully. This replacement population reflects both the availability of houses or lack of them in other more crowded parts and an increasing demand for relief from congested urban places at retirement.

This replacement population is able and willing to offer capital investment in housing that tends to create artificial values in this repect, operating against local competition. Infiltration of skilled ancillary trades inseparable from agriculture into the area is thereby lessened. Skilled craftsman infiltration in any trade is in any case becoming very rare. A degree of instability tends to be present in such areas which does not in point of fact occur in industrial urban areas as distinct from residential ones.

2. *Hill and marginal areas are places of economic paradox.* Many indispensable services cost more—road mileage, for instance, with its small but definite effect on retail prices. Service facilities, from those enterprises engaged by domestic consumers to wholesale provision, such as bulk fuel, repair of agricultural implements and facilities provided for rural businesses, are others. Such servicing firms rightly add, directly or indirectly, travelling time and higher incidental costs to their customers' accounts. Further, extra wages or incentives are often paid to operatives and fitters capable of the higher skills, whose employment away from urban centres necessitates additional payment. Conversely, the loss in many ways occasioned by lack of such skills, or the cost of long and expensive haulage to urban centres providing them, is a little assessed additional item in the progressive hill and marginal land farmers' cost of production. Thought will provide many more examples of this peculiar costing feature characteristic of such areas.

Geographically and climatically such areas possess less earning power, a factor more pronounced for the farmer than for other occupations with less at stake under short-seasoned skies and belated springs, but present, nevertheless, for all occupations in the areas concerned. In some trades and professions, of which butchering, general medical practice, trades catering for seasonal requirements—catering establishments, craft businesses and the like—are obvious examples, the decreased earning capacity in these areas, compared with more favoured ones, has a statistical basis, *i.e.*, low density of population, less incidence of specific demand, less proportionate use for specialised skills or expensive equipment, on which degrees of profitability ultimately depend. Conversely, the lack of such provision may adversely affect the amenities of such areas for potential earning power. Within the range of occupations and professions concerned, stocks of trade and occupational commodities, spares, replacements and incidentals, are required equal to areas of greater statistical earning power, and occasionally to insure against severe weather conditions, delay in supplies, and to benefit from discount and other rates related to quantity supply, larger stocks have to be held than might be considered usual. The unit size of these occupations may conceal the operation of this factor, but an estimation of work output per man hour against deadstock investment will often provide a mental jerk on this point. In addition, the quality of such accessories, especially those destined for outside use, must be relatively more durable than those for more favoured places, or, conversely, the depreciation rate is often higher in practice, with a shorter working life on lower potential output. This factor involves a higher cost consideration, which should not be ignored.

Present in such areas are modern discrepancies, small perhaps in themselves, which collectively contribute towards that " lessened resource " which is the underlying distinction of the marginal problem. In such areas, for instance, a tendency towards seasonal profits, and a tradition for the seasonal payment and collection of monies of various kinds, which assorts ill with the prevailing tendency for weekly payments, whether of retail accounts, fashionable hire purchase amongst wage-earners or payment for National Health Insurance premiums. Such matters, even in the field of the small items which they cover, have an appreciable bearing on liquid-cash requirements, money estimations and returns of all kinds. They play a definite part in the overall effect.

3. *Hill and marginal lands are areas of unpredictable requirements.* It is here that the hill and marginal farmers meet the full impact of their problems. No amount of foresight or skill,

for 'instance, can prevent the need for purchased fodder after periods of unseasonable weather. Drought, snow, rainfall, frosts—all have occasional local and immediate disaster values for all farmers, but to hill and marginal farmers with less resources risk is proportionately greater. Individual foresight directed against such contingencies, rather than use of the easier method of " experienced gamble," may well super-impose a trying cost in itself. Modern practices such as leys and long-term re-seeding, provide a partial answer. Such provisions not only incur high installation costs but also fail to evade practical economic repercussions. Prof. Ashby's assertion, for example, which can find support from practical experience, that the cost of substantial establishment of leys can be recovered only by liquid milk sales is certainly one to be borne in mind when other systems of farming, with other capital requirement corollaries, are considered. In alternative systems to that of dairying, re-seeding and ley farming are often professed keystones, and economic findings supported by practical experience, such as Prof. Ashby demonstrates in the case of re-seeding, should not and must not be ignored when extension of the use of hill and marginal land is under consideration.

4. *Farmers in marginal areas are denied access to the cash-crop facility available in more favoured areas.*

Cash crops, where they can be grown, can be varied to suit the cash needs of the unit, as they vary from year to year. Cash cropping in more favoured areas has a lower cost of production compared with the parallel stock investment, and its lower rate of cash realisation in marginal areas.

In hill and marginal areas it is therefore not surprising that financial improvisation, especially in the farming systems classically practised, has reached a high degree of skill amongst those whom time and the tests of time have left intact as productive units. These improvisations—substitutions as we have seen for the cash cropping of other areas—prevail as part of the occupational make-up of the individual. The term " marginal farmer " has recently been used as one of mild disfavour, whereas it is indicative of a financial acumen and flexibility in the niceties of profit margins which is not only unparalleled, but also largely unrecognised. That its prowess is financial rather than agricultural is a recognised factor of occupational survival in such areas. Whether or not this feature contributes to the most desirable farming system from a national standpoint in such areas is a debating point of some interest. It is difficult to see what other short-term improvisation can be adopted which will be sufficiently flexible to withstand incidental changes. Short-sighted a national policy must be which does not admit a reasonable prosperity for such areas, avoiding the constant anxiety which the pressure of factors over which the individual has little or no control must bring. For this improvisation "in-and-out" farming is the term most economists employ, though the distinction "trade farming" and "commodity farming" may be preferred to denote alternative systems. In days which rightly demand attested stock, and attach the highest prices and returns to pedigree work, it is probable that this improvisation factor has met with a rebuff which would become even more apparent should the hill-farming structure proper require re-assembly after subsidy removal. The marginal structure has already been required to meet this point, reflected as it is in the present relatively lower profitability of marginal farming over other types. Local auction markets themselves react to local conditions, and thereby remove a resource which might be used to counter local disabilities, such as weather losses, unprecedented and unprofitable fodder purchases, etc. No guaranteed price, nationally provided, touches this point. Moreover, the higher value of specialised product also invariably incurs a higher initial outlay, to which cattle are no exception. The introduction of a self-replacement system into a herd previously maintained as a flying herd, or a sale and replacement in a herd of a higher grade of cattle, or an alternative breed, are all indications of the close relation between capital requirement and income level which prevails in the farming industry. Low-priced establishment of herds of any breed is all too often productive of unreliable stock; in the cattle world this means loss at some point.

The risks and disabilities of speculative dealing as a means of livelihood are too self-evident to merit more than passing attention. It is sufficient to say that they serve a purpose in the farmers' world, but their function and services should be considered as an ancillary trade, and not as either a side-line for established farm units or, even less, a system to which farmers may turn in unprofitable times. Hill and marginal areas lend themselves particularly to the substitution of trading methods and practices. Wherever it occurs it should be considered a sub-normal type of good farming practice.

5. *Labour forces in hill and marginal systems.* In hill and marginal areas "family farming" is a well-established type in which all the forms of industry retrenchment and industry defences

can be most readily introduced. Whether a contemporary wage structure, an inclination to leave the family holding at an earlier age than hitherto and other purely social considerations will not weaken family labour resources remains to be proved. The feature of inherited capital has hitherto marked the economic distinction and disability of marginal areas, particularly in relation to deadstock considerations. The durability of simple horsedrawn implements is self-evident. Motorisation, even more than mechanisation, incurs maintenance costs which may be disproportionate to the amount of true profit it can earn. Replacement to avoid obsolescence, a depreciation time factor related to the cost and provision of spare parts are relatively new considerations with a range of potential effect on profitability. Where motorisation rather than mechanisation of the farm unit is undertaken, repercussions on farm profits are likely to become increasingly evident. Possibly these effects may be destined to be ascribed to more superficial though less exact reasons. At this point the need for technical education capable of endowing a rising generation with the power of analysis in relation to their skills becomes evident.

The lack of technical and other types of specialised education, which is a feature of marginal areas, here takes its place in the circle of disabilities. The cost of remote rural education, whether established forms or part-time specialities, particularly of a technical nature, is an example of the special disadvantage remote situations incur.

Where small hardy family farm units occur in source-land and lateral valley headlands, such units are particularly prone to family migration to more favoured units. Provided such families are replaced by similar, or potentially similar, units this is an entirely desirable progression. Modern fashion, however, is less tolerant of hard years in the remote uncompromising austerity, which this type of settlement entails. While in profitable eras the size of headland holdings tends to increase by the acquisition of neighbouring holdings, when such migration occurs, the lower ring, geographically, of this type of holding tends to appreciate in rental value in a given district. The comparatively high rental values allied to lack of cash-crop facility promotes a permanent state of affairs where little capital for expansion is readily available. In most of these types of holding capital investment judiciously undertaken either by landlord or tenant could produce a high degree of increased output in a comparatively short time. It must not, of course, be promoted to a degree where a change of system is incurred or contemplated. It is at this point that the effect of the intensity and disposition of capital, both fixed and working, appears. The point at which either the laws of increasing or decreasing returns come into operation at a varying time limit demands economic acumen which is rarely the endowment of either landlords or their tenants. In point of fact, where holdings are merged, all too often it is the converse which is the case. Rarely is an acquired holding of the headland type, when added to an existing unit, developed to the hilt. Successful tenants who move on are, moreover, often those who have tended most to deplete resources. Mercifully this type of holding is not unduly prone to any form of land "mining." Overstocking, especially with sheep, brings its own nemesis in the form of lessened values and high death rates.

6. *General factors affecting hill and marginal areas.* A word is indicated on the particular factors sheep farming proper brings. Its main disability (without subsidy assistance) is the seasonal money return, derived from lamb and draft sales, wool sales and the like, in relation to an increased weekly requirement of cash resources. This point has already been noted under section 2. Secondly, hill sheep farms require a skilled and a seasonal labour force no longer forthcoming, and thirdly, there is an apparently greater profitability in, and certainly a greater social inclination towards, dairying systems wherever they can be introduced. This third point can be dangerously illusionary. Hill dairying is too often productive of poor-quality milk which the consumer, as well as the dairy farmer jealous of a high reputation for the dairying industry (as who should not be?), both rightly deplore. Side tracking such as improvised or part-time dairying masks the hill and marginal land problem, and, moreover, provides financial improvisation by means of the production of a poor product—a very undesirable feature. The sheep farm proper, disregarding subsidy questions, probably reaches as near the goal of available cash crop—the desired objective—as any other one type of hill or marginal system.

To this structure of relatively low earning power and relatively stable conditions, in which a traditionally simple standard of living and spending plays a large part, comes a demand for extension of production per acre. Present requirements favour this extension mainly in the form of hardy breeding cattle, capable of furnishing store animals for the finishing markets of the lower country.

It is profitable to endeavour to decide exactly where the extra capital involved will fall within the structure, and at what point profit will be derived in relation to costs of production.

1. *As a preliminary to the breeding and rearing of large extra numbers of beef animals a proper provision of at least a proportion of stock-proof fences on each holding, or their refurnishing, is essential.* Grazing can be well conducted and reasonably regulated only where some degree of control can be extended over various classes of animals, even in large areas. Especially is this the case where bulls are run with herds or with bunches of heifers, as is indispensable for beef ranging. Secondly, a reasonable resting period for grazing areas reduces the incidence of worm infestation in particular, and allows secondary grazing to be carried out with some degree of accuracy. Even the systematic re-installation of boundary fences would in many cases and in the most remote parts prove a financial conundrum were the matter to be painstakingly remedied. The present trend towards the use of wire fences is no proper solution, owing to their deterioration in severe snowstorms, high rate of depreciation, lack of shelter facilities and in general the short life of wire erections. Blame allocated, however rightly, to the past is no remedy for the deficiencies of the present, and deterioration of fencing is a long-term symptom of land deterioration well rooted in the past.

The Agriculture Act 1947 and marginal land grants give some degree of remedy, provided incentive for the task is forthcoming. Rightly regarded, the hill sheep subsidy should be used in part for capital purposes, but this pre-supposes a permanent and not temporary type of fence, not subject to short-term depreciation. Stone walls or stout posts and rails are therefore preferable. There is little evidence that in marginal areas the sheep subsidy is regarded as capital supplementation, although a degree of wire-fence erection is being undertaken at tenants' expense. For the permanent type of provision there is a further complication between tenant and landlord—allocation of capital responsibility. To the latter no direct form of assistance is available, although some assistance on a group basis is available under complicated regulations.

2. *Capital sums required to provide and instal beef cattle herds.* That the cattle would be forthcoming should real demand be there is a matter which could safely be left to the capability of the dealers and suppliers ancillary to the agricultural industry. This inter-industry trading capacity has a resource which should not be under-estimated, but it is essential that a right degree of potential profit margins should be forthcoming. The point on

which hill farmers are likely to hesitate is the long-term lock-up character of such a capital undertaking. Some three or four years may well be expected to pass before the first profits fall due. Even if proportionate turnover of capital by re-sale of a section or special part of the purchase were undertaken, this involves inconvenient overheads such as haulage, herding and so on. It is at best an improvisation based on the long-term financial prospects of the undertaking, "in-and-out" farming in fact. As an improvisation for cash cropping in hill and marginal areas this type of farming has already been discussed. Beef cattle need established familiar surroundings to thrive to the best advantage, and short-term changes have more influence on weight-for-age and grade than might be casually supposed. The serenely bred animal reared in familiar surroundings is altogether a better proposition from all viewpoints than the animal of the same type and breed who may have made two or three market changes before its finishing process. In times when a concentrated finish of any kind is cut to a minimum this point has significance. Moreover, with the time lag on profit realisation involved, alterations in real values may have interposed, making an undue disparity between capital invested and subsequently realised profits.

3. *The question of winter feed.* Winter feeding for increased numbers may involve either direct fodder purchase or one of the methods of meadow and pasture improvement or installation. With the practice of short-term leys, which has become commonplace in more favoured parts, a ready supply of seeds hay for extra fodder in times of need could be left to inter-industry provision through normal trade channels. The question of price in this respect is dealt with later.

4. *The supply and housing of a suitable labour force.* Beef production in high places is a better-proportioned proposition than the establishment of hill-type dairying. The headage that can be tended per man hour is commendably high, and employs instinctive capacities, an inherent "stock-sense," which is less speculative as a characteristic than true intelligence amongst those prepared to live in hill country. A true degree of intelligence is required to operate dairying units satisfactorily. Moreover, alternative work is possibly less available or attractive to the "stock-sense" type of worker. Modern intelligences appear to favour mechanised work, while the light-hearted operation of a jeep or land car may serve to keep the "stock-sense" type of worker in the place of his calling.

5. *Some comment on the effect of the womenfolks' attitude to these hill places should be made.* There is no doubt that the superficial education of girls and young women, together with the effects of the newspaper, journals and cinema, with the combined bias they contribute towards a sophisticated and largely urban type of environment and menfolk, is a major influence in the ill balance in so many fashions from which hill and marginal land suffers. The country wisdom and human, if somewhat uncouth, kindliness which often characterise the outwardly rough and unpolished hill youngster makes less appeal to the country lass of contemporary years than perhaps to previous generations of women. The fact that natural selection in hill and marginal places is directed more on a type basis than towards material suitability, once a strong factor, is an observation which may be made over the years in specific areas. The subtle interplay of such factors, the effect on marriage rates, ages and other biological data, may well have an effect on the depopulation rate of the countryside other than by definite migration.

In addition, there are the special disabilities of remoter holdings to the farm housewife—the lack of modern amenity, the combination of outdoor and indoor work, the general inconvenience of a hard life in outdated premises, to say nothing of all too frequent dissatisfaction with specific requirements such as maternity and child-welfare services. These latter are only too often well below the standards which have come to be the accepted commonplace in the towns. While urban conditions, as such, are rightly unacceptable in the countryside, a parity of modern progress should be accepted as equally desirable for the remotely situated country mother as for her urban counterpart. All too often this is not so, and plays its part in the lessened number of women, young or old, to whom a remote life is acceptable or even tolerable.

6. *Educational aspects of hill and marginal life.* It is sometimes imagined that æsthetic appreciation of the countryside is allied to the higher intelligence quotients, and that right education in itself would develop contentment with remote conditions. What appears more certain is the addiction of the lower intelligence quotients towards the place of their birth and breeding. This also is a matter of observation between those that stay and those that leave specific places. The points should be borne in mind by those who have the direction of rural education in hand in days of transition. It points in overall consideration in favour of

education authorities who hold the view—not that adopted as national policy under the Education Act of 1944—that there is much to be said for a heterogeneous type of school life, rather than one of unilateral divisions. The comparative mixing of all types of intelligences would seem to have advantages as a preparation for the art of living in remote rural conditions. The comparative segregation of the best intelligences under the unilateral systems may well tend towards an attitude of mind favouring drift at a later age towards places of supposedly superior culture.

Any factors which help to install a popular notion that farm life gives definitely less advantages than that of the most manual of urban lives have a wide bearing on the whole question of provision and maintenance of the remotely situated labour force. Where purely social matters are concerned an incentive of high wages offered in hill places, even when both cash payment and perquisite are favourable in relation to the more intensive work required on arable farms (both rates related to basic rates and hours), makes little or no appeal. Ill-balance of the social mind is not the least resolutely insoluble factor which a detailed examination of the problem reveals. There is no easy solution. The problem is fundamental when reduced to its simplest form, and, for such, evolution and the process of natural adjustment to circumstances are perhaps the only satisfactory answers. With the disintegration of accepted forms during an evolutionary process, Nature is obdurately unconcerned. It may be debated whether anything less than the pressure of primitive forces of survival at work can reverse the present trend of drift and depopulation in remote areas. Without such a halt the chance of a widespread extension of the present use of marginal and hill land is not practicable, nor will extension of use occur in anything but fragmentary artificial forms, of little significance to the national need.

There remains then the question of what constructive remedies can be applied for the extension of production systems in such areas.

1. The continuation, by local authority encouragement, of such efforts to remedy all defects inherent in areas of low rateable value and specific measures where practicable.

2. The recollection that remote areas may need current advances in social measures, special services and costly public works, particularly adapted to meet special needs.

3. The establishment and maintenance of financial guarantees where the product, such as beef, is a national necessity. This is

already a satisfactory policy in the current negotiation structure, and guaranteed prices. Means of production other than financial considerations must also be considered, of which quantity as well as type foodstuffs is a major requirement.

4. Such special measures as may be needed to combat the underlying problem of deficient cash-crop earning power, or by so reducing specific costs of production as to counterbalance the effect.

The fact that current results in large-scale State experiments in marginal land areas, such as the African groundnut scheme, have, even with State resources, difficulties with the amount of capital required, should be sufficient evidence to suggest that the difficulties have a common basis, economic in origin, inherent to marginal land.

Over the whole problem the following reflections arise :

1. *Capital and credit facilities.* That the subsidy of individual enterprise by grant or other means is not entirely satisfactory has already been noted in considering the nature of marginal land subsidy. It follows therefore that it is the installation of improved capital facilities for individuals, with a steadiness of interest rates, which is a key factor in the matter. Such capital would be usefully available as working capital, and not exclusively available on guarantee of land or real estate. Land or real estate guarantees are obviously not always available for tenants. In a banking system already theoretically nationalised a definite policy on a broader front than at present prevails would be of immense value and long overdue.

2. *Limitation of earning power.* As has been shown, limitation of earning power is a crucially restrictive factor. State intervention for the encouragement of productive enterprise could profitably be directed towards a lowering of such extraordinary risks as have been shown to be inherent in such areas. The reversal of the present policy in lifting animal feeding-stuffs subsidies is thus indicated. Indeed, it is a matter of opinion whether such commodity subsidy re-imposed could not readily supersede headage subsidy, and would encourage the keeping of the optimum number to ensure maximum profits. The keeping of stock is encouraged immensely by availability of reasonably priced foodstuffs, even in times where other factors are less propitious. Instinctive factors, never far from the conduct of the simpler systems of farming, play a part in this foodstuff availability incentive, in greater proportion perhaps than more orthodox financial incentives.

With a subsidy on numbers, profits are statistically determined at present, and stocking can possibly be subject to deliberate undesirable limitation. A low-priced foodstuff policy could possibly be allied to an altitude basis in somewhat the same way as the present sheep subsidy is.

Such State intervention, superseding headage payments of all sorts, by providing a focus for the ebb and flow of conflicting conditions of such areas might well partially resolve deep-seated problems by the stimulation such a policy would bring. In so far that it is mainly altitude which defines the occurrence of this type of land it should not be difficult to define the areas where such specified application should apply. More than any other one factor, cheap and plentiful supplies of fodder and feeding-stuffs could resolve other problems. Plans to grow these crops *in situ* in such areas are seldom practicable. Costs of production are no less a disability than the effect of temperature on germination. Ample feeding-stuffs enable the progression of cause and effect to provide play and interplay to the best advantage. Moreover, such a policy would interlock well with the structure of guaranteed prices common to the whole industry.

No superficial platitudes unrelated to the actual conditions in such areas will create the tide of incentive and enthusiasm required to bring extensive plans into practical being, and to final national advantage.

J. M. RITCHIE

PROFESSOR GOODWIN'S MATRIX MULTIPLIER[1]

IN his interesting article, "The Multiplier as Matrix,"[2] Professor Goodwin draws two significant generalisations, first, that "there is no simple income–expenditure lag as ordinarily assumed in multiplier analysis" (p. 553), and secondly, that "the dynamical-matrix multiplier can be shown to have necessarily an oscillatory element in its behaviour" (p. 538). I wish in the first section of this paper to point out that the first of these assertions does not logically invalidate simple-multiplier analysis, as it might seem to suggest, but rather represents a difference between the assumption of simple-multiplier analysis and matrix-multiplier analysis. In the second section of this paper I shall demonstrate that the second of the above assertions is incorrect, and that, on the contrary, the multiplier cannot have an oscillatory element in its behaviour, provided that no marginal propensity to spend is negative and that autonomous injections of expenditure are not of opposite sign.

I

1. An implicit assumption of the Keynesian system, Professor Goodwin shows, is that Say's Law applies to firms (p. 543).[3] This means that all firms' receipts must be spent, so that money received by firms eventually finds its way back to income

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[1] I have much benefited in the preparation of this paper from valuable discussions with Professor Fritz Machlup, and from mathematical advice from Professor A. H. Clifford.

[2] ECONOMIC JOURNAL, Vol. LIX, No. 236, December 1949, pp. 537–55.

[3] This, of course does not include firms such as banks, insurance companies and trust companies, to the extent that their "output" consists of securities rather than commodities. Such firms must be considered (to borrow a phrase from Dr. Oscar Lange) as having a zero, rather than a unit, marginal propensity to spend back to households, for otherwise savings would not constitute a leakage. Similarly, Say's Law does not apply, in the Keynesian system, to other non-income recipients such as governments and foreign countries, as it does in the classical system; that is, taxes and imports, as well as savings, are leakages in the Keynesian system, for there are no automatic mechanisms such as balanced budgets, balanced foreign trade and sensitive capital markets, to bring them back into the income stream in the form of government expenditure, exports and investment. For the concept of a "marginal propensity to spend back" see Oscar Lange, "The Theory of the Multiplier," *Econometrica*, Vol. 11, Nos. 3 and 4, July–October 1943, pp. 232–5; for the equivalent recently developed concept of an "international refection ratio" cf. J. J. Polak, "An International Economic System," (abstract), *Econometrica*, Vol. 18, No. 1, January 1950, pp. 70–2.

recipients, in the form of wages and profits (including undistributed profits).[1]

A further assumption which must be made as soon as the Keynesian system is formulated dynamically is that income-propagation periods[2] are of uniform duration throughout the economy. As a special case of this assumption (but by no means necessarily) we may assume income recipients' transaction periods[3] to be uniform in length and non-income recipients' transaction periods to be of zero duration; that is, we may assume that income recipients spend their receipts after a lag, whereas non-income recipients spend their receipts instantaneously. This is what Professor Goodwin feels is the usual assumption;[4] it is certainly not the assumption made, however, by Machlup, Angell and Villard.[5]

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[1] Retained profits, since they are a part of national income, may be regarded as paid by firms to "earners of retained profits," as I have pointed out in my unpublished paper, "The Multi-Part Multiplier" (presented at the annual meeting of the Econometric Society, New York, December 28, 1949). The fact that marginal costs are less than price, therefore, does not mean that firms' marginal propensities to spend are less than unity, as Professor Goodwin implies (p. 544). It is only to the extent that changes in receipts are accompanied by changes in firms' debt-holdings that firms' marginal propensities to spend will be different from unity. Thus if the proceeds of receipts are used to retire debt outstanding (as in the case of depression conditions with excess inventory accumulation) or are accompanied by additional debt-creation, firms' marginal propensities to spend will be respectively less than or greater than unity. But "internal financing, failure to disburse earnings," and the fact that "marginal cost is . . . well below price" do not in themselves prevent Say's Law from operating among firms, as Professor Goodwin implies (p. 543). Corporate income taxes will, however, make firms' marginal propensities to spend in effect less than unity, if the government does not spend the proceeds.

[2] The income-propagation period is defined by Dr. Machlup as "the length of time which it takes for the money in active circulation to complete a circuit flow from income recipient to income recipient." Fritz Machlup, "Period Analysis and Multiplier Theory," *Quarterly Journal of Economics*, Vol. LIV, November 1939, pp. 1–27, reprinted in *Readings in Business Cycle Theory* (Blakiston, Philadelphia, 1944), p. 208.

[3] A transaction period, to extrapolate Professor Machlup's definition of the income period, may be defined as the period of time which it takes for the money in active circulation to complete a circuit flow from money-recipient to money-recipient.

[4] ". . . we find that usually one lag is assumed, specifically the one between income and consumption. The obvious extension is to admit a lag between income [meaning, here, receipts] and expenditure for every industry as well." (Pp. 537–8.) This is also the interpretation of Dr. Metzler, who distinguishes between the "Robertson sequence" in which "household expenditure lags" (income recipients' transaction periods) are predominant and "output lags" (transaction period of firms taken as a whole) are negligible, and the "Lundberg sequence" in which the opposite is true; cf. L. A. Metzler, "Three Lags in the Circular Flow of Income," *Income, Employment and Public Policy*, Essays in Honor of Alvin H. Hansen, New York, 1948, pp. 11–32.

[5] Cf. Fritz Machlup, *op. cit.*, including p. 215*n*, where reference is made to the works of Professors Henry H. Villard and James W. Angell.

Because of his assumption of equal transaction periods,[1] Professor Goodwin comes to the conclusion that there is no simple uniform income period, but rather a distributed lag which is composed of a series of transaction periods. Professor Goodwin, if I interpret him correctly; states his position as if his matrix multiplier *showed* that in reality it is transaction periods, rather than income periods, that are of uniform duration, and as if his analysis established the falsity of the simple-multiplier analysis.[2] He makes this assumption for the sake of convenience; the simple (non-matrix) multiplier assumption is also one of convenience.[3]

2. Though it may be a step closer to reality to analyse the flow of money by transaction periods, the assumption of equal transaction periods is, as Professor Goodwin realises, still unrealistic. It is possible, however, by means of a simple device, to allow for unequal transaction periods without unduly complicating the analysis.

The lag between a firm's receipts and its payments of wages may be expected to be considerably shorter than the lag between its receipts and its payments for certain raw materials and equipment. If a lag between a sector i's receipts and its payments to sector j is twice as long, for instance, as the lag between its receipts and its payments to sector k, then we may simply pretend that there exists a certain collecting agency l, through which the money passes on its way from i to j. Thus the payment from i to j may be regarded as split up into a payment from i to l over one period (i's marginal propensity to spend to l being, in fact, i's marginal propensity to spend to j), and a payment from l to j in the following period (l's marginal propensity to spend to j being equal to unity). In this way we may insert into the economy as many goblins as we please whose sole function is to obey Say's Law and hold up the flow of money!

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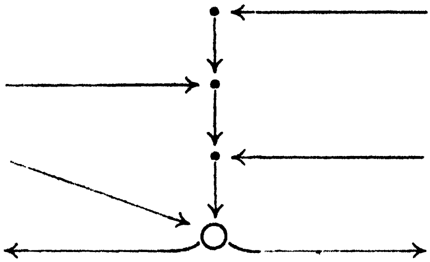
[1] "I shall now make the assumption that all the lags θ_i are the same and measure time in these uniform unit-lag periods. The more complicated, and realistic, case of unequal lags may be solved in principle, but the gains in simplicity are great from taking them all to be equal" (pp. 545–6).

[2] "One of the many uses which may be made of the dynamic-matrix multiplier is to illuminate the question of what is the nature and magnitude of the lag in the income flow in a society. The answer is that there is no *one* lag but many, endlessly compounded. . . . Therefore there is no simple income–expenditure lag as ordinarily assumed in multiplier analysis, but rather there is a distributed lag that spins out the consequences of any disturbance much longer than any inspection of industry or consumer lags by themselves would lead us to expect" (p. 553).

[3] Cf., for instance, Fritz Machlup, *op. cit.*, p. 211. Dr. Machlup recognises that, in fact, "the time interval between first and second income recipient will be replaced by a series of intervals of different length" (pp. 211–12).

For practical purposes it is desirable to assume a minimum number of different transaction periods. Let these transaction periods all be integral multiples of a certain *standard period*. If the length of this standard period is θ, and if the r transaction periods are (or approximate) integral multiples of θ up to $r\theta$, and if the economy is divided into n sectors, then at most $(r - 1)n$ collecting agencies will be inserted into the matrix. This may be shown in a simple diagram, where a circle represents any given sector of the economy, and each dot represents a collecting agency:



The large arrows represent inflows of money from other sectors, and outflows to other sectors and their respective collecting agencies. Depending upon whether inflows come directly or through one or more collecting agencies, the transaction period will be shorter or longer. In this example there are four transaction periods—θ, 2θ, 3θ and 4θ—and each sector therefore has at most three collecting agencies. The third collecting agency has a unit marginal propensity to spend to the second, the second has a unit marginal propensity to spend to the first and the first a unit marginal propensity to spend to the sector of the economy under consideration. Any other sector's marginal propensity to spend to the given sector is treated as a marginal propensity to spend to one of the given sector's collecting agencies, if the outside sector's transaction period is a multiple of θ. It may, of course, turn out that there is a lag of θ and one of 3θ, but none of 2θ; it will still be necessary in this case, however, to provide for the intermediate collecting agency as if the 2θ lag existed.

Since existing time lags cannot be reduced to exact integral multiples of one another without assigning an infinite number of collecting agencies to each sector of the economy, the above refinement is still removed from reality. Nevertheless, our scheme should serve as a close enough approximation to reality to suffice for practical purposes. In empirical work it might be desirable to reduce the number of sectors in order to allow for the introduction of collecting agencies; but the introduction of collecting agencies, resulting as it does in the mere insertion into the matrix of at most $(r - 1)n$ ones and the filling in of the rest of the enlarged $rn \times rn$ matrix with at least $rn(rn - 1)$ zeros (so that only rn of the r^2n^2 new matrix elements are non-zero elements—excluding any zeros that may appear in the original matrix), adds but little to the computational difficulties involved in empirical work.

3. From the preceding paragraphs we may draw the following conclusions. (1) If all income periods are of equal length, then there is a simple income-expenditure lag as ordinarily assumed in multiplier analysis. (2) If all transaction periods are of equal length (so that income periods are not of equal length—except as a special case), then the income period is, as Professor Goodwin shows, a distributed lag composed of a number of transaction periods. (3) Since, by definition, there is a uniform standard period (so that neither income periods nor transaction periods are of equal length—except as a special case), then both the income period and transaction period are, in the general case, distributed lags composed of a number of standard periods.

Conditions (1) and (2) are both special cases of (3). It may be no more realistic to assume that transaction periods are of equal length, than it is to assume that income periods are of equal length. Indeed, as members of the Cambridge school have contended, there may very well be greater disparities among transaction periods than among income periods.[1] Neither of these assumptions, however, is necessary for dynamic multiplier analysis.

II

4. Professor Goodwin divides the economy into units small enough so that each unit's marginal propensity to intraspend (as I have called it) is zero, that is to say, that each diagonal element of the multiplier matrix is zero. Since therefore the trace of the matrix (which is the sum of its diagonal elements) is zero, it follows by a well-known property of matrices that the sum of the matrix's characteristic roots, being equal to the trace, is also equal to zero, and hence that not all the roots can be positive and real. Since there must be some negative or complex roots, Professor Goodwin concludes that "not only may this system exhibit oscillatory behaviour—it must do so" (p. 550).

It is possible to demonstrate, however, that not only is this statement false, but the converse is true. Let the matrix a have all its elements non-negative. Now the matrix multiplier may, as Professor Goodwin has himself shown, be written as a geometric series:

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[1] This observation was made to me by Dr. Machlup.

$$dY(t) = [I + a + a^2 + \ldots + a^{t-1}]dE \quad . \quad . \quad (1)$$

where $dY(t)$ and dE are column vectors representing respectively the change in receipts at time t and the autonomous change in expenditure (injections) in parts 1 to n of the economy, and where I is the identity matrix. It is assumed, also, that all the elements in the vector dE are of the same sign.

Now since we assume that no element in a is negative, it follows that no element of any power of a can be negative, for it is impossible to multiply matrices with all non-negative elements and obtain a product matrix with any negative elements. The geometric progression $I + a + a^2 + \ldots$ must therefore be monotonically increasing for every part of the economy. We have therefore proved that, as long as no marginal propensities to spend are negative and no autonomous injections are of opposite sign, not only may this system exhibit *monotonic* behaviour—it must do so. Oscillations are, in this case, impossible.[1]

5. It is an interesting fact, therefore, that we may have a system which necessarily has negative or complex roots, and which is at the same time necessarily non-oscillatory. The reason for this apparently strange result may easily be explained.

The economy may be described by the following system of difference equations:

$$\left.\begin{aligned} dY_1(t) &= dE_1 + a_{11}dY_1(t-1) + \\ &\qquad a_{12}dY_2(t-1) + \ldots + a_{1n}dY_n(t-1) \\ dY_2(t) &= dE_2 + a_{21}dY_1(t-1) + \\ &\qquad a_{22}dY_2(t-1) + \ldots + a_{2n}dY_n(t-1) \\ &\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \\ dY_n(t) &= dE_n + a_{n1}dY_1(t-1) + \\ &\qquad a_{n2}dY_2(t-1) + \ldots + a_{nn}dY_n(t-1) \end{aligned}\right\} \quad (2)$$

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[1] It is quite possible, nevertheless, for the elements $I, a, a^2, \ldots$ *themselves* to form an oscillatory series (like a ripple), giving rise to "jerkiness" in the series $I + a + a^2 \ldots$ But such oscillations result only from a *single injection* of expenditure, and not from a constant stream of injections over time, which is the assumption made in Professor Goodwin's article (p. 546). It may readily be seen, furthermore, that—given zero initial values for the vector of disbursements (which implies no restriction, because the vectors $dY(t)$ and dE represent deviations from initial values)—if the vector dE is positive and monotonically increasing with time, or negative and monotonically decreasing with time, there can still be no oscillations in $dY(t)$. Oscillations can therefore arise only if there is oscillation in the stream of injections (a single injection is really an oscillation, for it is a rise in disbursements from zero to the given level followed by a fall back to zero).

where $dY_i(t)$ is the increment in the receipts of part i of the economy at time t, dE_i is the autonomous increment in injections of expenditure in part i, and a_{ij}[1] is part j's marginal propensity to spend in part i. Defining e_i as the proportion of the autonomous increment of expenditure in i to the total autonomous increment in expenditure, and k_i as the multiplier for the ith part of the economy, we have

$$e_i = \frac{dE_i}{\sum\limits_{i=1}^{n} dE_i} \quad \text{and} \quad k_i = \frac{dY_i}{\sum\limits_{i=1}^{n} dE_i} \quad . \quad . \quad . \quad (3)$$

so that equations (2) may be rewritten

$$\left.\begin{aligned} k_1(t) &= e_1 + a_{11}k_1(t-1) + \\ &\qquad a_{12}k_2(t-1) + \ldots + a_{1n}k_n(t-1) \\ k_2(t) &= e_2 + a_{21}k_1(t-1) + \\ &\qquad a_{22}k_2(t-1) + \ldots + a_{2n}k_n(t-1) \\ &\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \\ k_n(t) &= e_n + a_{n1}k_1(t-1) + \\ &\qquad a_{n2}k_2(t-1) + \ldots + a_{nn}k_n(t-1) \end{aligned}\right\} \quad (4)$$

which may be written in matric form :

$$k(t) = e + ak(t-1) \quad . \quad . \quad . \quad . \quad (5)$$

where $k(t)$, e, and $k(t-1)$ are column vectors.

The solution of the system of equations (4) is, as I have shown in " The Multi-Part Multiplier," the sum of the solutions of its static and dynamic parts, the static part being

$$\bar{k}_i = \frac{\Delta'_i}{\Delta} \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (6)$$

where (following the notation of " The Multi-Part Multiplier ") Δ is the determinant of $I - a$ and Δ'_i is the determinant of the matrix formed by substituting the e vector in the ith column of $I - a$ (according to Cramer's rule). The dynamic part is given by

$$\hat{k}_i(t) = \sum_{j=1}^{n} c_{ij}\lambda_j{}^t \quad . \quad . \quad . \quad . \quad . \quad (7)$$

where the c_{ij}'s are constants determined by the initial conditions, and the λ_j's are the roots of the characteristic equation

$$|I\lambda - a| = 0 \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (8)$$

The solution we want is therefore

$$k_i(t) = \frac{\Delta'_i}{\Delta} + \sum_{j=1}^{n} c_{ij}\lambda_j{}^t \quad . \quad . \quad . \quad . \quad (9)$$

---

[1] In " The Multi-Part Multiplier " I used the equivalent notation $j^{Y}i$.

Let

$$\kappa_{ij} = \frac{c_{ij}}{\Delta'_i/\Delta}; \quad . \quad . \quad . \quad . \quad . \quad . \quad (10)$$

then (9) may be written in the more convenient form

$$k_i(t) = \frac{\Delta'_i}{\Delta}\left(1 + \sum_{j=1}^{n} \kappa_{ij}\lambda_j^{t}\right) \quad . \quad . \quad . \quad . \quad . \quad (11)$$

The initial conditions of the system are

$$\left.\begin{aligned} k(0) &= 0 \\ k(1) &= e \end{aligned}\right\} \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (12)$$

Given these initial conditions, we can determine, from (5), the value of every $k(t)$. We thus obtain the progression

$$k(t) = [I + a + a^2 + \ldots + a^{t-1}]e \quad . \quad . \quad (13)$$

From (11) we may derive, by giving t the successive values 0, 1, ... , $n - 1$, the system of equations

$$\left.\begin{aligned}
&\kappa_{i1} + \kappa_{i2} + \kappa_{i3} + \ldots + \kappa_{in} = l_i(0) \\
&\kappa_{i1}\lambda_1 + \kappa_{i2}\lambda_2 + \kappa_{i3}\lambda_3 + \ldots + \kappa_{in}\lambda_n = l_i(1) \\
&\kappa_{i1}\lambda_1^2 + \kappa_{i2}\lambda_2^2 + \kappa_{i3}\lambda_3^2 + \ldots + \kappa_{in}\lambda_n^2 = l_i(2) \\
&\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \\
&\kappa_{i1}\lambda_1^{n-1} + \kappa_2\lambda_2^{n-1} + \kappa_{i3}\lambda_3^{n-1} + \ldots + \kappa_{in}\lambda_n^{n-1} = l_i(n-1)
\end{aligned}\right\} \quad (14)$$

where

$$l_i(t) = \frac{k_i(t)}{\Delta'_i/\Delta} - 1 \quad . \quad . \quad . \quad . \quad . \quad (15)$$

(14) may be written in the matric form

$$\begin{bmatrix} 1 & 1 & 1 & \ldots & 1 \\ \lambda_1 & \lambda_2 & \lambda_3 & \ldots & \lambda_n \\ \lambda_1^2 & \lambda_2^2 & \lambda_3^2 & \ldots & \lambda_n^2 \\ . & . & . & . & . \\ \lambda_1^{n-1} & \lambda_2^{n-1} & \lambda_3^{n-1} & \ldots & \lambda_n^{n-1} \end{bmatrix} \begin{bmatrix} \kappa_{i1} \\ \kappa_{i2} \\ \kappa_{i3} \\ . \\ \kappa_{in} \end{bmatrix} = \begin{bmatrix} l_i(0) \\ l_i(1) \\ l_i(2) \\ \ldots \\ l_i(n-1) \end{bmatrix} \quad (16)$$

The above matrix is known as the Vandermonde matrix.

In a similar fashion, we may derive from (9) the multiplier for all sectors of the economy taken together, which may be written in the form

$$\sum_{i=1}^{n} k_i(t) = \frac{\sum_{i=1}^{n} \Delta'_i}{\Delta}\left(1 + \sum_{j=1}^{n} K_j\lambda_j^{t}\right) \quad . \quad . \quad . \quad (17)$$

where

$$K_j = \frac{\sum_{i=1}^{n} c_{ij}}{\sum_{i=1}^{n} \Delta'_i/\Delta} \quad . \quad . \quad . \quad . \quad . \quad . \quad (18)$$

From (17) we obtain the matrix equation

$$\begin{bmatrix} 1 & 1 & 1 & \dots & 1 \\ \lambda_1 & \lambda_2 & \lambda_3 & \dots & \lambda_n \\ \lambda_1^2 & \lambda_2^2 & \lambda_3^2 & \dots & \lambda_n^2 \\ . & . & . & . & . \\ \lambda_1^{n-1} & \lambda_2^{n-1} & \lambda_3^{n-1} & \dots & \lambda_n^{n-1} \end{bmatrix} \begin{bmatrix} K_1 \\ K_2 \\ K_3 \\ . \\ K_n \end{bmatrix} = \begin{bmatrix} L(0) \\ L(1) \\ L(2) \\ . \\ L(n-1) \end{bmatrix} \quad (19)$$

where

$$L(t) = \frac{\sum_{i=1}^{n} k_i(t)}{\sum_{i=1}^{n} \Delta'_i/\Delta} - 1 \quad . \quad . \quad . \quad . \quad . \quad (20)$$

6. Before proceeding to analyse the general case, we may consider the special Keynesian case. We assume, therefore (as we saw above), that (1) Say's Law applies to firms and (2) income-propagation periods are of equal duration throughout the economy. We may therefore treat households as a closed system.[1]

Dividing households into n component parts, we may describe the economy by the above system of equations (2). The sum of all these equations gives us national income :

$$\sum_{i=1}^{n} dY_i(t) = \sum_{i=1}^{n} dE_i + \sum_{j=1}^{n} \sum_{i=1}^{n} a_{ij} dY_j(t-1). \quad . \quad (21)$$

Substituting (3) in (17) we may transform (17) into the equation for the multiplier for the whole economy :

$$\sum_{i=1}^{n} k_i(t) = 1 + \sum_{j=1}^{n} \sum_{i=1}^{n} a_{ij} k_j(t-1). \quad . \quad . \quad . \quad (22)$$

Now the Keynesian assumptions imply that each part of the economy has the same marginal propensity to spend, that is, that every $\sum_{i=1}^{n} a_{ij}$ is the same for every j. Let every $\sum_{i=1}^{n} a_{ij} = \alpha$. Then (18) reduces to the simple difference equation

$$\sum_{i=1}^{n} k_i(t) = 1 + \alpha \sum_{i=1}^{n} k_i(t-1) \quad . \quad . \quad . \quad (23)$$

whose solution is

$$\sum_{i=1}^{n} k_i = \frac{1}{1-\alpha}(1-\alpha^t) \quad . \quad . \quad . \quad . \quad (24)$$

which is the simple dynamic multiplier.

In this case, $\sum_{i=1}^{n} \Delta'_i/\Delta = \frac{1}{1-\alpha}$. Substituting this and (24) in (20) we therefore have

$$L(t) = -\alpha^t \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (25)$$

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[1] This was shown by Professor Goodwin for the static case (pp. 542–3).

Equation (19) therefore becomes :

$$\begin{bmatrix} 1 & 1 & 1 & \dots 1 \\ \lambda_1 & \lambda_2 & \lambda_3 & \dots \lambda_n \\ \lambda_1^2 & \lambda_2^2 & \lambda_3^2 & \dots \lambda_n^2 \\ \cdot & \cdot & \cdot & \cdot \\ \lambda_1^{n-1} & \lambda_2^{n-1} & \lambda_3^{n-1} & \dots \lambda_n^{n-1} \end{bmatrix} \begin{bmatrix} K_1 \\ K_2 \\ K_3 \\ \cdot \\ K_n \end{bmatrix} = \begin{bmatrix} -1 \\ -\alpha \\ -\alpha^2 \\ \cdot \\ -\alpha^{n-1} \end{bmatrix} \qquad (26)$$

We also know from (20) that α satisfies our system of equations, that is, that one of the roots—say λ_s—must be equal to α. Hence the vector on the right of the equality sign is equal to the sth column vector of the Vandermonde matrix, with sign changed. Now the value of the ith constant in the vector of constants is equal to the ith-column Cramer determinant, divided by the determinant, of the Vandermonde matrix.[1] Thus the sth-column Cramer determinant will be simply the negative of the Vandermonde determinant, and all the other Cramer determinants will vanish because they will contain two linearly dependent column vectors.[2] The sth constant is therefore equal to minus unity, and all the other constants vanish. Thus, in the Keynesian case, one of the roots is equal to the marginal propensity to spend, and all the other roots are annihilated. The other roots can be as negative or complex as they please, and yet the multiplier will show no oscillations !

7. We may now see how, in the general case, the multiplier (provided all marginal propensities to spend are non-negative, and no autonomous injections are of opposite sign) cannot oscillate, regardless of the fact that it may have negative or complex roots.[3] If individual marginal propensities to spend are unequal, then one of the roots will be a weighted average of marginal propensities to spend, and will have a coefficient which is not very different

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[1] We use the expression ith-column Cramer determinant to mean the determinant of the matrix formed by replacing the ith column of the Vandermonde matrix by the vector on the right of the equality sign.

[2] We assume, as does Professor Goodwin, that all the characteristic roots are distinct, so that the Vandermonde matrix is itself non-singular.

[3] The explanation which follows is still in terms of total transactions (or, if the assumptions of the preceding paragraphs with regard to Say's Law and equal income periods are maintained, in terms of total income) rather than in terms of the receipts of any part of the economy; that is, it is still an analysis of equation (16) rather than equation (19). Some simple examples will show that "jerkiness" in the stream of any sector's receipts results, not from jerkiness in the stream of total transactions, but from jerkiness in the flow of money from one sector of the economy to another. Professor Goodwin does not seem to be justified, therefore, in holding that "practically without exception, total transactions, national income and the other sector outputs move up and down together" (p. 554).

from '—1, whereas the other roots will be virtually annihilated by small coefficients. The effect of negative and complex roots will be to make the passage of income less smooth than it would be when propensities to spend are unequal; but negative and complex roots will never be able to offset the dominant root enough to prevent the solution from being monotonic.

The characteristic roots of the matrix therefore have little to do with the oscillatory behaviour of the system. The existence of negative or complex roots is a necessary, but not sufficient, condition for oscillatory behaviour, provided that autonomous injections into the economy are all of the same sign; a sufficient condition for monotonic behaviour, under these circumstances, is that all marginal propensities to spend be non-negative. As a rule such a condition will hold, but negative marginal propensities to spend should not be ruled out as impossible.[1] If, however, autonomous transfer of income is included in the multiplicand, so that the vector e contains elements of opposite sign, then the existence of negative or complex roots is not even a necessary condition for oscillatory behaviour. Even if all roots are positive and real, it is quite possible for the passage of income through time not to be monotonic.[2] The existence of negative or complex characteristic roots is therefore neither a necessary nor a sufficient condition for oscillatory behaviour.

We may then ask whether the same situation holds in the case of the analysis of stability conditions. Fortunately it will be found that if no element of the matrix is negative, no characteristic root which is greater than unity will be annihilated. If the matrix elements are allowed to be of any sign, however, it is possible to devise cases in which roots which lie outside the unit circle of the complex plane are annihilated or virtually annihilated.[3] In such a case, the condition that the latent roots of a matrix lie within the unit circle of the complex plane is a sufficient but not a necessary condition for stability.

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[1] Negative marginal propensities to spend will exist if a large proportion of people's budgets is devoted to inferior goods. Governments will have negative marginal propensities to spend in the private economy if they react to changes in tax yields by changing expenditure in the opposite direction.

[2] For a discussion of the "waves" in income which may follow an export from one sector of an economy to another, see Fritz Machlup, *International Trade and the National Income Multiplier*, The Blakiston Co., Philadelphia, 1943, *passim*.

[3] For instance any root which does not lie within the unit circle will be repectively annihilated or virtually annihilated if the column sums of the matrix are equal or nearly equal, and less than unity, so that income will still be stable or virtually stable.

DOES THE MATRIX MULTIPLIER OSCILLATE?

THE question is: does the multiplier process as worked out by Kahn and Clark, but expanded to include inter-firm and government payments, give rise to cycles? The answer is certainly yes, but, as Mr. Chipman shows, there is a special case in which it does not, and it is exactly this special, and unrealistic case which multiplier theorists usually talk about. The correct statement is that there is *latent* in the transactions structure of society the possibility of oscillation, but that this may or may not be brought out according to the circumstances.

The easiest way to see this is by crude numerical examples. Suppose that we divide the American economy into three sectors, Business, Government and Households, and that we select values of the propensity-to-spend matrix that are suggestive of the data for around 1940 (collinearity makes the values doubtful). All inter-firm, inter-government and inter-household payments are suppressed to preserve the formal likeness with a proper, more elaborate subdivision. Our system is then

$$\begin{bmatrix} 0 & {\cdot}14 & {\cdot}70 \\ {\cdot}14 & 0 & {\cdot}05 \\ {\cdot}58 & {\cdot}45 & 0 \end{bmatrix} \begin{Bmatrix} B(t) \\ G(t) \\ H(t) \end{Bmatrix} + \begin{Bmatrix} I_1(t) \\ I_2(t) \\ I_3(t) \end{Bmatrix} = \begin{Bmatrix} B(t+1) \\ G(t+1) \\ H(t+1) \end{Bmatrix} \quad . \quad (1)$$

where the Is are the total injections by sector. To get the time-series solutions, for either variable or constant Is, we take the values of B, G and H at time t, multiply by the square matrix (across and down), add the appropriate Is, to get the current receipts, which are the basis for expenditures in the next period. Thus to get $H(3)$, we add $0{\cdot}58B(2)$, $0{\cdot}45G(2)$, and $I_3(2)$.

First consider a constant level of injections, from $t = 0$ on, with the values 23, 0, 18 and given initial levels of B, G and H. The resulting evolution of the system is as follows:

$$\begin{array}{cccccccccc} t & 0 & 1 & 2 & 3 & 4 & 5 & . \; . \; . & \infty \\ \begin{Bmatrix} B \\ G \\ H \end{Bmatrix} & \begin{Bmatrix} 72 \\ 16 \\ 74 \end{Bmatrix} & \begin{Bmatrix} 77 \\ 14 \\ 66 \end{Bmatrix} & \begin{Bmatrix} 71 \\ 13 \\ 69 \end{Bmatrix} & \begin{Bmatrix} 73 \\ 13 \\ 65 \end{Bmatrix} & \begin{Bmatrix} 71 \\ 13 \\ 66 \end{Bmatrix} & \begin{Bmatrix} 71 \\ 13 \\ 65 \end{Bmatrix} & . \; . \; . & \begin{Bmatrix} 71 \\ 13 \\ 65 \end{Bmatrix} \end{array}$$

Evidently we can have oscillations, and these are damped since the system is stable. As a special case we may take a system which was in equilibrium initially. Assuming the injections to change, at $t = 0$, from 23, 0, 21 to 18, 0, 26 and to remain there forever, we have the following:

$$\begin{array}{cccccccccc} t & 0 & 1 & 2 & 3 & 4 & 5 & \cdots & \infty \\ \begin{Bmatrix}B\\G\\H\end{Bmatrix} & \begin{Bmatrix}74\\14\\70\end{Bmatrix} & \begin{Bmatrix}69\\14\\74\end{Bmatrix} & \begin{Bmatrix}72\\14\\72\end{Bmatrix} & \begin{Bmatrix}70\\14\\74\end{Bmatrix} & \begin{Bmatrix}72\\14\\73\end{Bmatrix} & \begin{Bmatrix}71\\14\\74\end{Bmatrix} & \cdots & \begin{Bmatrix}72\\14\\74\end{Bmatrix} \end{array}$$

Therefore, even if the system is in equilibrium, but if the injections move in opposite directions, oscillations may arise. Incidentally this is the kind of case which aggregative analysis cannot distinguish, for the total amount of the injections is never changed. As a still more special case we may consider an economy in equilibrium subjected to a single shift in injections, all in the same direction. Given a shift from 23, 0, 21 to 26, 0, 22, we get the following vector-time series:

$$\begin{array}{cccccccccc} t & 0 & 1 & 2 & 3 & 4 & 5 & \cdots & \infty \\ \begin{Bmatrix}B\\G\\H\end{Bmatrix} & \begin{Bmatrix}74\\14\\70\end{Bmatrix} & \begin{Bmatrix}77\\14\\71\end{Bmatrix} & \begin{Bmatrix}78\\15\\73\end{Bmatrix} & \begin{Bmatrix}79\\15\\74\end{Bmatrix} & \begin{Bmatrix}80\\15\\75\end{Bmatrix} & \begin{Bmatrix}81\\15\\75\end{Bmatrix} & \cdots & \begin{Bmatrix}81\\15\\76\end{Bmatrix} \end{array}$$

Here all sectors vary monotonically, though irregularly and interdependently. This is the only case considered by Mr. Chipman, and he correctly states, what I failed to see, that in no such case can oscillations arise. These examples (and (12) below) show that the matrix multiplier may or may not give rise to cycles, depending on how the system is excited, and it is this which I intended to convey in my paper.

In the first and second examples we get a type of behaviour which cannot occur in the simple multiplier, which is always monotonic for a single change in the level of injections. In fact, if we make the maximum aggregation consistent with Keynesian analysis, considering only firms and households (but taking each to have a receipts–expenditures lag) we still easily get oscillations, as the reader may verify by trying it.

To distinguish the various cases, consider an economy with a constant level of injections, $\{B\}$ which changes at time zero to $\{B + \Delta B\}$. The various ΔBs need not, and often will not, be of the same sign. Given, for $T \geqq 0$,

$$\{y(t+1)\} = [a]\{y(t)\} + \{B + \Delta B\} \quad . \quad . \quad . \quad (2)$$

we consider first the associated homogeneous equations,

$$\{y(t+1)\} = [a]\{y(t)\} \quad . \quad . \quad . \quad . \quad . \quad (2a)$$

There exists a linear transformation $[h]$,

$$\{y\} = [h]^{-1}\{\eta\} \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (3)$$

such that, substituting (3) in (2*a*),

$$\left.\begin{aligned}\{\eta(t+1)\} &= [h][a][h]^{-1}\{\eta(t)\} \\ &= [c]\{\eta(t)\}\end{aligned}\right\} \quad . \quad . \quad (4)$$

where $[c]$ is a diagonal matrix with the n distinct roots of $[a]$ along the diagonal. The general solution will be of the form

$$\{\eta(t)\} = [\lambda]^t\{N\} \quad . \quad . \quad . \quad . \quad . \quad . \quad (5)$$

where $\{N\}$ consists of n arbitrary constants. Hence

$$[\lambda]\{\eta\} = [c]\{\eta\}$$

or

$$[\lambda - c]\{\eta\} = \{0\}$$

If we ignore the trivial, null solution, then we must have an arbitrary $\{\eta\}$,

$$[\lambda] = [c] \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (6)$$

so that $[\lambda]$ is diagonal with the roots along the diagonal. Hence

$$\{y(t)\} = [h]^{-1}\{\eta(t)\} = [h]^{-1}[\lambda]^t\{N\} \quad . \quad . \quad . \quad (7)$$

By adding a particular solution of (2), such as

$$\{Y\} = [I - a]^{-1}\{B + \Delta B\} \quad . \quad . \quad . \quad (8)$$

to (7), we get the complete solution, which is then

$$\{y(t)\} = [h]^{-1}[\lambda]^t\{N\} + [I - a]^{-1}\{B + \Delta B\} \quad . \quad (9)$$

Thus our solution has a statical part, the new equilibrium values, and a dynamical part, the form of which for a typical sector is

$$y_i(t) = k_{i1}N_1\lambda_1^t + k_{i2}N_2\lambda_2^t + \ldots\ldots + k_{in}N_n\lambda_n^t$$

where the k_{ij}s are the elements of $[h]^{-1}$. Thus all sectors have latent in them the same constituent motions, except that they are combined in different proportions. Because of the asymmetry of the matrix $[a]$ these roots need not be all real, and because of the zeros along the principal diagonal they cannot all be real and positive. Therefore, for arbitrary initial conditions, it is always possible to have oscillations. As a result of further search in the literature for indications about the nature of these roots, I have found a most interesting theorem of Frobenius (my translation):

> "If the elements of a matrix A are all real and positive, then its characteristic equation has a root r, which is real,

> positive, simple, and of absolute magnitude greater than every other root. If $s \geqq r$, then the elements of the adjoint of $sI - A$ are all positive."[1]

This means that if the system is excited in such a way that, for one or more sectors, there is an oscillation which overshoots the equilibrium, eventually, if there is no further disturbance, a monotonic root must dominate, leading to a cessation of overshooting (alternations of sign in deviations from equilibrium) but not a cessation of oscillation. On p. 476 of the same paper Frobenius proves another theorem of great interest to economists. " If the elements a_{ik} of an n by n matrix are all positive, then the greatest characteristic root lies between the greatest and least of the n numbers

$$a_{\alpha} = a_{\alpha 1} + a_{\alpha 2} + \ldots\ldots + a_{\alpha n} (\alpha = 1,2 \ldots\ldots n)."$$

Since a matrix and its transpose have the same characteristic roots, this proves immediately that our system is stable in consequence of the assumption of all marginal propensities to spend less than one (all columns of $[a]$ add to less than one).

Which of the system's modes of motion will be excited and to what degree depends on the deviations of $\{y\}$ from its new equilibrium values at time zero. The nNs are uniquely determined by

$$\{N\} = [h]\{y(0) - \overline{Y}\} \quad . \quad . \quad . \quad . \quad . \quad (10)$$

Since these deviations may be positive or negative, large or small, there seems to be no significant limitation of the Ns, so that in general all motions, including at least one oscillation, will be excited. I fail to see that Mr. Chipman has successfully challenged this fact. If we have the special case of the economy in equilibrium,

$$\{y(0)\} = [I - a]^{-1}\{B\},$$

and hence

$$\{N\} = - [h][I - a]^{-1}\{\Delta B\}.$$

If further all the ΔBs are of the same sign, and if there is no further change for some time, then as Mr. Chipman shows, there will be no oscillation. There is also the still more special case in which the economy happened to be in its new equilibrium position, so that $\{y(0) - \overline{Y}\}$ is zero, and then *all* N's are zero and no motion of any kind occurs.

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[1] G. Frobenius, "Ueber Matrizen aus positiven Elementen," in the Sitzungsberichte der Koeniglich Preussischen Akademie der Wissenschaften, 1908, XXVI, p. 471.

To show these results, we substitute (10) in (9) giving

$$\left.\begin{aligned}\{y(t)\} &= [h]^{-1}[\lambda]^t[h]\{y(0) - \bar{Y}\} + \{\bar{Y}\} \\ &= [h^{-1}\lambda h]^t\{y(0) - \bar{Y}\} + \{\bar{Y}\} \\ &+ [a]^t\{y(0) - \bar{Y}\} + \{\bar{Y}\}\end{aligned}\right\} \quad (11)$$

To test for monotonicity, consider the sign of the increment,

$$\left.\begin{aligned}\{\Delta y(t)\} &= \{y(t+1)\} - \{y(t)\} \\ &= [a]^t[a]\{y(0) - \bar{Y}\} + \{\bar{Y}\} - [a]^t\{y(0) - \bar{Y}\} - \{\bar{Y}\} \\ &= [a]^t[a - I]\{y(0) - \bar{Y}\} \\ &= [a]^t[-[I - a]]\{y(0) - [I - a]^{-1}\{B + \Delta B\}\} \\ &= [a]^t\{B + \Delta B - [I - a]\{y(0)\}\}\end{aligned}\right\} \quad (12)$$

Since all the elements of $[a]$ are positive, so also will all the elements of any power of it be, and hence if all the elements of the column vector have the same sign, all the elements of $\{\Delta y\}$ will have that sign for all t, *i.e.*, all ys will grow or decline monotonically. In general, there is no reason why the elements of the column vector should all have the same sign and therefore there is no reason to assert monotonicity. This holds even if all the sector injections change in the same direction (all ΔBs with the same sign). If we have the special case of an economy in equilibrium just prior to the shift (*i.e.*,

$$\{y(0)\} - [I - a]^{-1}\{B\} = \{0\}),$$

then

$$\{\Delta y(t)\} = [a]^t\{\Delta B\}$$

with the result that monotonicity depends solely on whether or not all the ΔBs have the same sign.

I should like to emphasise the somewhat unreal character of the problem, which is constructed in deference to the usual habit of analysing the multiplier in terms of a steady level of injections or of a single, unrepeated injection. If this were all the multiplier meant, it would be rather useless, since both cases are most improbable. The proper justification of the method is that in this way we get a response which is characteristic of the economy, and only by superposing a succession of such responses do we get any realistic results. If one analyses an arbitrary time series of injections by means of a series of constant levels subject to (plus and minus) changes, one must remember that it is ordinarily quite unrealistic to assume that the economy was in equilibrium before and that the level continues indefinitely.

The easiest way to approach the reality of a variable rate of injections is to use equation (2) to generate a solution. Taking the variable injections as $\{b(t)\}$, and $[a]^{\circ}$ as the unit matrix $[I]$, we have

$$\left.\begin{aligned}
\{y(0)\} &= \{y(0)\} \\
\{y(1)\} &= [a]^{\circ}\{b(0)\} + [a]^{1}\{y(0)\} \\
\{y(2)\} &= [a]^{\circ}\{b(1)\} + [a]^{1}\{y(1)\} = [a]^{\circ}\{b(1)\} + \\
&\qquad [a]^{1}\{[a]^{\circ}\{b(0)\} + [a]^{1}\{y(0)\}\} \\
&= [a]^{\circ}\{b(1)\} + [a]^{1}\{b(0)\} + [a]^{2}\{y(0)\} \\
\{y(3)\} &= [a]^{\circ}\{b(2)\} + [a]^{1}\{b(1)\} + [a]^{2}\{b(0)\} + \\
&\qquad [a]^{3}\{y(0)\} \\
\{y(t+1)\} &= [a]^{\circ}\{b(t)\} + [a]^{1}\{b(t-1)\} + \ldots\ldots + \\
&\qquad [a]^{t}\{b(0)\} + [a]^{t+1}\{y(0)\}
\end{aligned}\right\} \qquad (13)$$

or

$$\{y(t+1)\} = \sum_{\tau=0}^{t} [a]^{\tau}\{b(t-\tau)\} + [a]^{t+1}\{y(0)\} \quad . \qquad (13a)$$

The first term of (13*a*) may be called the convolution of the dynamical structure $[a]$ with the time series $\{b(t)\}$. It can also be called the Faltung or Duhamel sum because it is derived by the pairing of appropriate $[a]$s and $\{b\}$s by " folding " their time series in the middle. Since the system is stable, we may always neglect the second term in (13*a*) by taking τ large enough.

The solution in the form (13*a*) tells us that transactions at any time are the result of the previous injections back to the point at which we began reckoning. At that point the injections are replaced by the initial transactions, but these are merely the combined effects of all past injections and are a kind of weighted sum of injections. As with the simple multiplier, we may determine the essential dynamical structure, or weighting functions, by applying a unit impulse of spending to the first sector with zeros for all the others, then a unit impulse to the second sector alone, and so on for all n sectors. Combining all these we may speak of a unit matric impulse $[I]$ which gives rise to the series

$$[a]^{\circ},\ [a]^{1},\ [a]^{2},\ [a]^{3},\ \ldots\ldots$$

Any injections vector will be a linear combination of the n unit injections vectors. The injections distant in time are more completely discounted (given less weight), than are those closer in time. If we identify t with now, we have the backward-looking multiplier, which asserts that receipts now depend on recently past injections. On the other hand, if we identify time zero with now, we have the forward-looking multiplier, which asserts that transactions at any future time t will depend on present outlays and the injections between now and then. In neither case is there any easily observable " multiplier." With either a simple or a matric multiplier, variable injections are liable to produce oscillations, as the reader may convince himself by trying a random time series of injections. The reason, presumably, in both cases is the Slutsky effect, *i.e.*, the cumulation of random disturbances will produce cycles. Beyond this property common to both, the matrix multiplier has another, which consists of the fact that the transition from one level of activity to another is likely to set up internal or structural vibrations *within* the aggregative system.

In general, it seems to me that Mr. Chipman is more interested in aggregates, whether national income or total transactions, whereas I wished to direct attention to the structural properties of the system. My impression is that general interdependence analysis is more complete and more accurate than national income analysis, and that it contains but is not contained within the latter. Say's Law applied to firms is a useful device of approximation to isolate households and thus avoid the difficulties of general equilibrium, but nothing has convinced me that it has much validity in principle. Naturally, if one semi-isolates a part of the economy, one loses the consequences of interdependence.

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THE PRICING OF MANUFACTURED PRODUCTS

Mr. Andrews's study of *Manufacturing Business* [1] represents very much more than its title would seem at first glance to imply. It is, in effect, an attempt to re-write the theory of pricing in the light of field inquiries which the author has conducted into the behaviour of manufacturing firms. This field work was made possible by a grant by the late Mr. Samuel Courtauld to Nuffield College, but it had its intellectual origins in the work of the pre-war Oxford Economists' Research Group which was concerned to confront economic theory with economic facts.

Mr. Andrews's results are so diametrically opposed to much recent thinking and writing, and his attempts to construct alternative theories are, to my mind, so powerfully destructive not only of the newer accretions of imperfect competition theory but also of the whole body of economic reasoning that it is of the first importance that they should be subjected to rigid criticism. Since that is the purpose of this review, it is right that it should begin with a word of gratitude to Mr. Andrews. The re-examination of our theories and their reconciliation with the facts is overdue. If he has not said the final word, he has at least forced us to consider the adequacy and degree of over-simplification of much that is being taught to-day.

In a preface, Sir Henry Clay tells us that Mr. Andrews's investigations began with two intensive studies : the first, made possible by Mr. Courtauld, was an examination of the rayon industry; the second, which followed it, was a similarly intensive study of certain branches of the boot and shoe industry. The first, one gathers from Sir Henry Clay, cannot be published because it would be bound to disclose, owing to the small number of firms in the industry, information that is confidential. The second, may, however, be published later. It is immensely to be hoped that it will be. For on the basis of what has hitherto been published it is a remarkable paradox that Mr. Andrews confronts existing theories not with a solid body of opposing and irreconcilable fact but with a ready made alternative set of theories, which may, or may not, be a better explanation of the facts. But of the facts themselves, the book is almost wholly innocent, and a critic is put in the difficult position of choosing between existing theories and a set of new theories unsupported by any detailed evidence.

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[1] *Manufacturing Business.* By P. W. S. Andrews. (London : Macmillan, 1949. Pp. xviii + 308. 15s.)

Let us begin, then, with the new theories of pricing that Mr. Andrews advances. They may be briefly summarised (following the author, pp. 184 and 204) as follows :

> (1) " that the price which a business will normally quote for a particular product will equal the estimated average direct costs *plus* a costing-margin " ;
>
> (2) " that average direct costs will tend to remain at a constant level, whatever the output that is being produced, given the prices of the direct-cost factors of production and ignoring any extraordinary increase in direct costs (due, *e.g.*, to overtime wages being paid for extra output in the short period) " ;
>
> (3) " that the costing-margin will normally tend to cover the costs of the indirect factors of production and provide a normal level of net profit, looking at industry as a whole, and may reflect any general permanent changes in the prices of indirect factors of production, but will remain constant, given the organisation of the individual business, whatever the level of its output " ;
>
> (4) " that given the prices of the direct factors of production, price will tend to remain unchanged, whatever the level of output " ;
>
> (5) " that, at that price, the business will have a more or less clearly defined market and will sell the amount which its customers demand from it, its sales thus equalling its limited share of the market for the kind of goods which it is producing." [1]

Mr. Andrews contrasts the above account of the system with that of " modern economic theory " which has " tended to argue . . . that the rate of profit which a business gets is not even mainly determined by the competition of business men in response to the stimuli of costs and prices. The business man is regarded as having control over his price through his control over his own output, and he is thought to exercise that control and to maintain his profits at their maximum level, by restricting output, regardless of the community's interest in greater production."

I hesitate to describe this account of " modern economics " as a complete caricature. For all I know it may be an accurate account of the confusions into which, in the hands of second-rate teachers, this branch of theory has now degenerated. But this " modern economic theory," bereft of identifiable parentage, bears not the most superficial resemblance to the theories of imperfect competition with whose Cambridge origins, at least, I have a certain familiarity. First, it was of the essence of those theories that one was dealing with a situation in which entry was assumed to be sufficiently free and competition sufficiently effective to reduce profits to a " normal " level and to ensure that average revenue did not exceed average cost including " normal " profits. Second, it was never assumed as an axiomatic *modus operandi* that prices were maintained by restricting output. It was rather assumed that in a majority of instances the prices of the products of a firm were actually determined by the firm (as Mr. Andrews assumes almost universally in this book), but that the firm had (cf. principle (5), above) " a more or less clearly defined market " in which a price fractionally above minimum average total cost did not automatically imply that the firm's sales were reduced to zero; that the firm was therefore not driven " by the stimuli of costs and prices " to reduce its prices to the level of minimum average cost; that in the esoteric sense that output was less and costs greater than they would be at minimum average total cost there was restriction of output, though in the work-a-day sense of a firm deliberately restricting output below that implicit in the prices it fixed there was no conscious restriction. I will readily grant Mr. Andrews that the practical limitations of block-making have resulted in published diagrams that suggest elasticities of individual-firm-demand and rates of falling costs which are utterly unrealistic in practice and seem to imply the existence and exploitation of immensely greater monopoly powers than I believe the ordinary firm to possess. But this form of analysis was, by intention at least, an analysis of a highly competitive, though not perfectly competitive, situation.

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[1] The above is a straight and complete transcript of the summary given by the author on p. 184, with the single exception that I have divided his (1) into (1) and (2), which cover issues which to my mind are essentially separate.

What is important, however, is not the rightness or wrongness of Mr. Andrews's account of those ideas with which he disagrees, but whether or not his account of the basic forces in the pricing system is right and other accounts are fundamentally wrong.

The theories of imperfect competition, as I see them, were a first attempt, building on the foundations of classical economics, to bring into focus the problems of the ultimate decision-making unit—the firm. They did not purport, in the hands of those who developed the ideas first, to describe in detail the ways in which actual firms fixed actual prices. But, they did purport to describe the underlying economic forces, as they might work out in a world that was highly, but not in the technical sense perfectly, competitive.

Because they were, in this sense, theories of competition they were also theories of probable survival. The more nearly a firm's actions might correspond to the actions supposed, the larger were likely to be its profits, or the less its losses, and the greater its chance of building up reserves, of securing capital with which to expand and of surviving in the face of competition. Thus there was no essential conflict between their short-term and long-term aspects, and the long-term equilibrium grew naturally and automatically out of the shorter-term pursuit of profit.

I stress these aspects of the theories of imperfect competition because Mr. Andrews's account of the pricing system is an account of a ritual. Despite the stress which he repeatedly lays on the competitive nature of industrial enterprise (cf. pp. 172 and 270), he seems to go out of his way to repudiate the idea of firms maximising their profits as an element in the battle for survival (*e.g.*, p. 270). I am sure that I am not misrepresenting Mr. Andrews if I say that throughout the book he regards the ritualistic price-fixing system that he describes as the antithesis of the policy of profit-maximisation. But if one so regards it, what are the consequences ? If the ritual is in fact the antithesis of profit-maximisation, then those who least perfectly conform to the ritual have the greatest chance of survival. The wicked nonconformists will triumph ; the respectable ritualists will suffer.

A belief in a wholly irrational ritualistic system of pricing is so fundamentally destructive of all the concepts of economics as a competitive evolutionary system, moving always towards the most economic use of resources, that I feel driven to ask whether Mr. Andrews's account of the ritual is a true one. Is the ritual necessarily an irrational one, or is the ritual that he describes a reasonable account of rational action for long-term profit-maximisation in industries possessing certain characteristics ? For while I find myself dissenting from Mr. Andrews's interpretations of these actions, I certainly do not dissent from his account of the actions themselves, save in certain minor respects.

May we begin by taking the case of a firm operating in an industry in which the market conditions approximate to those of perfect competition ; in which each firm produces a large range of alternative products with the same basic equipment ; [1] in which design and taste are changing all the time; in which the economies of large scale, both short-term and long-term, are negligible; in which competitors can enter the market very quickly.

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[1] I find it difficult to understand why, in confronting existing theories with a theory supposedly built on realistic assumptions of the actual world, Mr. Andrews

In such conditions, a firm which wishes to maximise its profits has to consider three chief problems when fixing the price of a new product which it is considering whether to introduce:

(1) At what price could it hope to sell the product?

(2) Could it use its resources more profitably in other forms of activity?

(3) In the light of the above, should it, or should it not, put this product on the market?

The answer to the first question is by no means obvious. If a firm is making an absolutely standard product for an absolutely standard market, the market itself may well provide the answer; a small firm producing cotton yarn may quite reasonably decide not to carry an elaborate costing staff, but to save their salaries, concentrate on technical efficiency and accept market price, as it must do. Alternatively, a firm may, as many of the London drapers do, employ a small staff of spies to find at what price its rivals are selling similar products. But neither of these methods is applicable to a new design that is not yet on the market. In that case, remembering the assumption of nearly perfect competition, two questions arise. First, what is the maximum price which the public would be prepared to pay for an article of this character? Second at what price would competitors be able to put it on the market? It is only if the article can be put on the market at a price that will persuade some buyers to buy that production is at all worth-while. But if that is possible, then the supply price of actual or potential competitors represents the demand price for the initiating firm in all but the very shortest period. If the price-fixing period (in many cases a year) is long relatively to the period of entry of potential competition, the rational action of a firm might be expected to consist in discovering at what price competitors could sell this product, and whether that price would enable customers to be found.

The problem of the best use, in a comparatively short period, of the limited resources of a firm is best regarded theoretically as a problem in discriminating monopoly: How can the firm's resources be divided most profitably between the various products of

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• (pp. 82 and 253) assumes that the business produces a single product only. In practice there is good reason for thinking that the prevalence of the many-product organisation is an important explanation of the ritual that he describes.

the firm? If the markets are almost perfect, the best simple test will be to ensure that uses which give a smaller margin over the direct costs of factors are not preferred to uses which give a larger margin, except so far as the smaller margin may reflect smaller indirect costs. A rough and ready test is to calculate the direct cost, to add the costing-margin at which the firm's resources will be reasonably fully employed and reject those uses in which the "costs" so calculated exceed the probable selling price.

Both of these entirely rational calculations bear a striking superficial similarity to the ritual of the costing rules. But the actual similarity in practice depends very much on the method by which the "costing-margin" (the addition to be made to direct costs) is determined. As to this, there are discoverable in Mr. Andrews's book two accounts which one may conveniently call the priestly code and the lay code.

The priestly code describes the "costing-margin" [1] as tending to cover the costs of the indirect factors of production and provide for a normal level of net profit. But it is clear that the lay code superimposes on this pure doctrine a substantial element of regard for the market. The costing-margin will vary for the same product between different businesses (p. 159). A firm with high direct costs is likely to be obliged to accept a smaller costing-margin (p. 169). For most established businesses, the net margin is "that which they expect to get on the average" (p. 165). It will differ for different products within the same business (p. 159), not only because of differences of overhead costs involved in their product but also because their markets differ in the extent to which they are liable to the competition of new entrants (p. 178). The costing rules of small competitors will conform to the costing rules of a price leader (p. 182). Special selling costs will have to come out of the margin (p. 187). It will "give the business the highest level of price that it can maintain against competition in the long run, and will be revised downwards at once if the business, in fact, meets competition at a lower level of price" (p. 253).

The view that the costing process is really engaged in discovering the demand price in the market is reinforced by certain other practices. First, Mr. Andrews makes it clear that, "if output falls the business man will not revise his prices so as to charge a higher allowance for average overheads. That would be absurd, as causing the charging of a higher price in a falling market. It would bring the danger of his market going to competitors" (p. 164). In a depressed industry, even when output is continuously at a low level, the costing rules are likely (p. 165) to assume full normal output, or, if price cutting appears, "an even finer margin." Second, costing rules do not ordinarily take account of abnormal economies or diseconomies due to the firm itself spreading overheads over a larger output or to its production entailing overtime or night work (pp. 109 and 158).

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[1] Cf. the summary of the principles of pricing quoted above. See also pp. 159 and 174.

It has been argued above that the costing rules are wholly consistent with an objective of the maximisation of profits on the assumptions that competition is almost perfect and the entry of new competition both free and rapid. Those are conditions which apply pretty generally in the boot and shoe industry, on which Mr. Andrews's generalisations are largely based. But Mr. Andrews is seeking to provide us with generalisations that are applicable to all industry and all price-making. It is therefore relevant to inquire whether the wider extension of his rules can or cannot legitimately be assumed and whether the application of the rules in cases where perfect competition and rapid entry do not exist provide perfect competitive pricing in imperfect competition situations.

It is clear that Mr. Andrews's account of the actions of firms makes them act as if they assume that markets will be lost if price is raised above the potential supply price of competitors. It is far less clear that Mr. Andrews's account would imply infinitely elastic demand curves for individual firms for greater outputs. Indeed, at many points Mr. Andrews appears to go much farther than most of us in suggesting that the elasticity of demand for greater outputs is relatively low.

The market for the individual firm (p. 146) is "a fairly definite group of people." "So long as its price is right, an established business will have a more or less clearly defined market, and will be protected from the efforts of would-be competing businesses to cut into that market" (p. 153). The manufacturer is likely to assume (p. 180) that if he cuts a price, "his rivals will cut their price to protect their own markets when they know that he has cut his." "Price cutting will then normally mean merely a fall in the total receipts of the whole group of competing producers and, since their costs will not be affected, they will be worse off."[1]

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[1] Mr. Andrews is here thinking primarily of price cutting to maintain output in conditions of depression. But there is no obvious reason why a manufacturer should make different assumptions about his power to cut prices without invoking retaliation in other circumstances in which lower prices on his part would involve a reduction in the sales of other firms.

Indeed, price-maintenance schemes are (Mr. Andrews holds) in such cases justifiable because " the price-cutting which they seek to prevent is not, in itself, of social value. It leads to a fall in prices, but it also causes a fall in incomes and so increases unemployment . . . in a depression there is no virtue in lower prices as such." [1]

In considering expansion, moreover, the firm will take account of the limits of the factor supplies, and particularly the labour supplies, likely to be available to it. It will remember that very rapid expansion will make it necessary " to bid away workmen who have a preference for remaining where they are already " (p. 225). " It certainly will not act as supposed in the usual theory, continuously increasing its wages as it bids for an expanding labour force." If it starts wage-competition with other employers " the business may be left with a labour force which has expanded only slightly, but for which it has to pay very greatly increased rates of wages. . . . Such a situation bears resemblance to the price-cutting situation discussed in the previous chapter. Its consequences will naturally deter the business man in so far as he can foresee them " (pp. 226–7).

I find it hard to distinguish this balancing of the advantages and disadvantages of price cutting and of expansion from the balancing process which the theories of imperfect competition have assumed. Mr. Andrews makes his business man contemplate price cutting and reject it because it adds, if others cut also, relatively little to his receipts. He makes him contemplate expansion and reject too rapid an expansion because it adds too much to his probable costs. Is not this the exact weighing of alternative scales of output, with their corresponding additions to revenue and additions to cost, which economists have been assuming?

I think it is right also to ask whether Mr. Andrews is on safe ground in assuming that his principles as set out above apply generally to all branches of industry. A reviewer can do no more than quote an instance where they do not appear to apply in their purer form. I happen myself to have an opportunity of knowing and taking part in the price-fixing operations of a publishing house. In book publishing the crude division into direct and indirect costs is obviously inappropriate. There are: (*a*) costs which are specific to the individual copy of the particular book; (*b*) costs which are specific to the particular book, but not to the individual copy; (*c*) costs which are general to the business as a whole. This three-fold division of costs is common to a great many firms in a great many industries of a multi-product character; but, in the special case of publishing, costs under the head of (*b*), which include composition, correction, block-making, and all preparatory work for printing off are very large compared with the other costs. A publisher certainly does not assume that his average direct costs of a particular book (defined as (*a*) *plus* a share of (*b*)) are constant for editions of different sizes. Nor does he assume that his pricing of a particular book is rigidly determined by the price at which other publishers might produce books on the same subject by other authors. It is customary to discuss the possible sales at different prices, and the alternative possibilities of breaking even or making a profit with different prices and their corresponding costs. It is normally assumed that a book should not be published (unless it has special qualities to justify it) if it cannot break even and make its proper contribution to general costs. On the other hand, a book that is likely to be successful would not be deliberately priced at a high price; but its price might in retrospect turn out to have been fixed on an assumed sale appreciably smaller than the actual sale (that I take to be the way in which Mr. Andrews assumes that more successful firms make more than normal profits). While in this process some of the elements that Mr. Andrews describes do appear, the balancing of marginal cost and marginal revenue becomes a very nearly conscious part of the process. I believe there are a number of other industries, particularly in the light-engineering field, where a particular product requires particular capital investment in special equipment, tools, jigs and the like, and where there are certain overhead costs of the whole batch of products, such as were long ago described by Adam Smith and Babbage. I would like much more evidence that specific average unit costs are regarded as being constant for different levels of possible planned output. Nor do I feel absolutely convinced that all manufacturers in all industries, other than publishing, regard the potential demand price of their product as wholly independent of their own planned output. Before such generalisations are extended from the two industries which Mr. Andrews has studied to the whole field of industry, we surely need more evidence from a larger range of industries.

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[1] This is surely a remarkable intellectual somersault for a believer in the merits of competition.

In the light of all this I find it hard to sum up my views of Mr. Andrews's work. I think he has done well to remind us that the actual processes of price fixing seldom consciously take the form assumed in some of the expositions of imperfect competition. But I am very far from convinced that his account of what happens represents an alternative theory. I believe that when one really tries to disentangle what is being done, one comes back to a theory not very different from the existing theories. I believe that everything turns on whether the "costing-margin" is a thing determined by the actual indirect costs of a firm, or is merely an addition to direct costs which reflects the judgment of the firm as to what price the market will bear. I believe that, even if one does not go outside Mr. Andrews's own pages, one can find good reason to think that what the market will bear is a chief element in the process; but that, in assessing that, it is customary, as well as rational, to think in terms not of a very short period, but of a longer period which takes account of the difficulties of price changes as well as of the speed of entry of competition. But I do not think that we have said the last word on any of this, and the mechanism of price change in different industries in shorter and longer periods is a subject which requires a great deal more thought.

But we shall not, I believe, make useful progress by writing down a series of alternative generalisations. What we need most is comparative detailed study of the processes in particular industries with particular frameworks of cost and demand. For my own part I believe that Mr. Andrews could do us no greater service than to publish in full detail his own background studies, and address his further work to the adult intelligences of his colleagues rather than to the layman or the elementary student to whom so much of the present work seems to be directed.

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REVIEWS

Charles Dickens and Early Victorian England. By R. J. CRUIKSHANK. With 64 illustrations in photogravure. (London: Sir Isaac Pitman & Sons, Ltd., 1949. Pp. 308. 20*s.*)

" WHAT was the age of Dickens " . . . " that is the grand testimony of the age of Dickens." These are the first and last words of a book of absorbing interest because of the subject and the author. For what in our youth we thought to be the England of all time has become a period piece and its great novels essential documents of social history : and knowing Mr. Cruikshank from his *Roaring Century* we know to what effect he gets steam up. We must have beside us the *O.E.D.*, *D.N.B.*, perhaps also a " Who's Who in Dickens," if we are to catch every nuance and allusion. It is a positive pleasure to try to catch him out, be it ever so rarely. " The tutelary genius of Georgian agriculture, Coke of Norfolk, was a Whig so implacable that he said to his grandson, ' My boy, whatever you do in life, never trust a Tory. I never have myself, and, by God, I never will ' " (p. 120). For " grandson " please to read " son " : for he married his ward at sixty-eight, and his son, the Second Earl, 1822–1909, is the little boy of the story. And again " this age of mahogany and ormolu, of triumphant science and mechanical prowess, of fat living, bovine materialism, and the blessed certitude of the five per cents " (p. 229) which five per cents ? It can't be Mr. Weller's reduced counsels; and Goulburn in 1844 converted the 3½s to 3s, as Goschen after him the 3s to 2½s. One is entitled to mention the fact, because at the end of the book is a riot of pictorial statistics—population, emigration, revenue and trade. Stick to Facts, Sir ! But Sissy gazed in rapture at the reds and blues and green, and especially at the increase of red babies. " I could fancy," she said, . . . "You are not, Cecilia Jupe," Thomas Gradgrind solemnly repeated, " to do anything of the kind."

The age of facts was also the age of steam. " Keeping up the steam ! That simile is racy of the period, and it is in the true vein of Pecksniff and Chadband " (p. 109). But why not " vein of Mr. Pancks ? " says your reviewer with a steam and a snort . . . " Dear Dickens, and Cruikshank, at least not dear and most assuredly not Dickens, for I have not the pleasure but pray excuse me " . . . Oh, adorable Flora !

The book is in six parts: I. Great Expectations. II. Hard Times. III. Steam and Smoke. IV. The Battle of Life. V. The Haunted Man. VI. Diversions. Its artistry consists in this. For the first half he sees England through the eyes of Dickens and his contemporaries, contrasting its feverish pace and sanctimonious gluttony with the cold and stately insensibility of the eighteenth century. (But was it so cold? What of the Coram in Tattycoram: and when he tells us "there were certainly no such reports brought out then as Dr. Kay's on the health of Manchester or Chadwick's on sanitation" (p. 21), what of Dr. Thomas Perceval 1740–1804 and the Manchester Board of Health of that day?). Of all the tributes to Dickens as a social reformer I like best that of Shaftesbury quoted on p. 178, "God gave him a general retainer against all suffering and oppression." Chapters on religion and Victorian Sundays (Arthur Clennam's early Victorian Sunday, merging into Samuel Butler's mid-Victorian Sundays), and on Darwin and the Age of Science link the first half of the book to the second, where, in Mrs. Jarley's words, "We come to the General Public and they want stimulating." Here Mr. Cruikshank excels. In the company of Vincent Crummles, he acts Dickens, and a second David Copperfield recalls the thrills and pains of his own youth, with the contrast between then and now. He delights in music and fireworks, in the horse-riding and balloon flights, recalled amid the desolation of a London blitzed by the Second World War, yet nevertheless still going strong. "When all is said and done, when the account is struck, all that matters is the staunch heart of a people, its flow of creative ideas, its capacity to set free its own energies and its faith in itself. That is the grand testimony of the age of Dickens."

C. R. FAY

Cambridge.

The Keynesian Revolution. By LAWRENCE R. KLEIN. (London: Macmillan, 1950. Pp. xii + 218. 15*s*).

The Economics of John Maynard Keynes. The Theory of a Monetary Economy. By DUDLEY DILLARD. (London: Crosby Lockwood, 1948. Pp. xv + 364. 18*s*.)

THESE are both English editions of books published earlier in the United States. Both of them will already be familiar to many English readers.

Dr. Klein's well-written and closely reasoned essay has a mixed audience in view; some sections are addressed mainly to professional economists, but it is hoped that the general argument will be intelligible to a broader public. He opens with two chapters on the development of Keynes's thought up to 1936, including a useful analysis of the " fundamental equations " of the *Treatise on Money.* He then goes on to give at a fairly sophisticated level a broad survey of the *General Theory* and its relationship to " classical " writings. Despite certain inaccuracies noted below, this chapter is a fine piece of work, which should be particularly useful as revision reading to the student. The chapter which follows, a more detailed treatment of a number of controversial issues, is less successful. The savings–investment controversy is well and clearly disposed of, but the discussions of the wage question and of interest theory carry less conviction, the vehemence with which the conclusions are reiterated inspiring suspicion rather than confidence. Dr. Klein is very reluctant to concede that the loanable-funds approach to the theory of the rate of interest can be reconciled with liquidity-reference, and insists that stocks, not flows, are the appropriate concepts to work with. This is surely no more than a matter of convenience. It is true, as he argues, that a Wicksteedian approach is particularly suitable, when, as in the case of the security market, the function of the price-mechanism is mainly, if not entirely, to re-allocate existing stocks rather than to dispose of new supplies. But to say that, where stock-holdings are large, a flow analysis actually involves faulty logic is quite a different assertion, and an untrue one. The remaining chapters deal in turn with anticipations of Keynesian theory by earlier writers—mostly on the lines of Chapter 23 of the *General Theory,* but including an interesting section on Marx, with the application of the principle of effective demand to inflationary situations; and with social and political implications. In conclusion, there is a substantial mathematical appendix, concerned in part with proving that the Keynesian conclusions necessarily follow, under certain realistic assumptions, from the supposition of profit and utility maximisation; and in part with contrasting Keynesian and other models along lines now broadly familiar.

Dr. Klein's viewpoint is Keynesian in the rather narrow, American, sense of the term, with a pronounced leaning to the left. The argument throughout is conducted with a lucidity and vigour of a very high order, and the author has interesting things to say on every page. The standard of accuracy is high but not quite above criticism, though there are not many passages where the reader is likely to be seriously misled. Two examples of apparent errors may be mentioned. In the diagram on p. 88

the dotted line should be to the right of that running parallel to it, not below; this mistake unnecessarily weakens the case being argued. On p. 70 the reader can hardly be expected to swallow the assertion that, because the value of the stock of wealth is equal to the flow of income capitalised, it makes no difference whether we say that the rate of interest is a function of the total quantity of assets owned or a function of the level of income!

Despite its many merits, *The Keynesian Revolution* is a little disappointing in some more general respects. Pains have evidently been taken to counter the detailed criticism which Keynesian economics have encountered, but in a book published over ten years after the birth of the General Theory rather more attempt might have been expected to deal with the large issues which Keynes left virtually untouched. The most obvious deficiency is in the treatment of those long-term problems of economic progress that are bound up with the nature and volume of investment. Various determinants of investment are mentioned, but in many passages Dr. Klein is content to speak of the volume of investment as "autonomous"—in other words to admit that the theory as expounded is incomplete. Had more attention been paid to these and cognate topics, the impression might have been avoided of a certain complacency about the state of our present theoretical structures that does disservice to their main architect.

The second book under review is purely didactic in purpose. The author modestly states that he lays no claim to originality of treatment except in "the self-conscious manner in which I have attempted to explain the . . . theory by linking it to the policies which Keynes advocated" (p. ix), and in the emphasis laid on the importance of contemporary events in moulding Keynes's thought. This pragmatic approach is further developed in the final chapter, which is the most interesting and original part of the book.

In many ways Professor Dillard's book is an able one, but its self-imposed limitations seriously reduce its value. The book is neither an introduction to the *General Theory*—for it aims at thorough coverage and its length is considerable—nor is it a critical companion, for although an excellent and up-to-date bibliography is attached to each chapter, no attempt is made in the text to depart from the letter of Keynesian doctrine except in so far as it was modified or developed in Keynes's own writings after 1936. *The Economics of John Maynard Keynes* appears therefore to be intended as a substitute for the *General Theory* for the benefit of the student or layman who finds the original work too difficult. The order of presentation is the same as Keynes's, and Professor Dillard must at times have been hard put to it to avoid copying out whole paragraphs. Now it may well be doubted if such a close and dogmatic adherence to the original text is really the most beneficial approach for the sort of reader mentioned. The confusion that reigned even in professional circles in the first few years after the publication of the *General Theory* is sufficient evidence that its manner of presentation was misleading in important respects. But Professor Dillard will make no concessions. Thus we are told that the rate of interest determines the marginal efficiency of capital and not vice versa and that this is a " very important point " (p. 197); the admission that the multiplier process takes time is made grudgingly and at a late stage in the argument, and so on.

Professor Dillard is particularly anxious to show that the different elements in the theory hang together in such a way that certain fundamental ideas are relevant at every stage of the argument. But sometimes this in many ways laudable desire gets pushed too far. It is clearly an error, arising out of a confusion of the individual's situation with that of the nation, to argue, as he does, that where there are unused resources interest cannot be considered the reward for not-spending, on the grounds that it is possible to increase consumption without any reduction in savings. Nor is it true that liquidity-preference would necessarily be absent in a static economy, unless that concept is extremely narrowly defined. One result of Professor Dillard's somewhat monolithic attitude is that the reader is left with the impression that on each point where there is a difference between Keynes and " the classics " the latter were guilty of half a dozen separate and independent blunders. Experience suggests that this is not conducive to clarity in the mind of the beginner.

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Chance and Choice by Cardpack and Chessboard. Vol. I. By L. HOGBEN. (London: Max Parrish, 1950. Pp. 417. 50*s*.)

THIS text-book of statistical theory employs unusual methods of presentation in accordance with the vigorous views set out in the author's foreword. He points out that " less than 1 per cent.

of research workers clearly apprehend the rationale of statistical techniques they commonly invoke" and that "the experts themselves disagree on fundamental issues: . . . One therefore hopes that an attempt to present the elements of statistical theory by exploiting a new educational technique will commend itself. . . ." The book is intended for students who have covered the higher school-leaving syllabus in mathematics, and whilst avoiding issues of rigour always offers a rationale—*i.e.*, a vague proof of validity —for the statistical methods advocated.

The result so far of this attempt at a highly original book is a first volume of over 400 pages covering the following ground. Chapter I: Miscellaneous Mathematical Theorems. Chapter II: The Meaning of Probability in Terms of Equally Likely Alternatives. Chapter III: The Binomial and Multinomial Distributions and the Poisson Approximations to the Binomial. Chapters IV to V: Significance Tests for the Difference between Two Proportions and Confidence Intervals for Proportions. Chapter VI: The Method of Moments. Chapter VII: Significance Tests for the Difference between Two Sample Means, including the *t*-test. Chapter VIII: Spearman's Index of Rank Correlation, and Instructions on Computing a Correlation Coefficient. Chapter IX: Linear Regression Illustrated by Games of Chance. The Partial Correlation Coefficient. Chapter X: The Balance Sheet Aspect of the Analysis of Variance.

This is admittedly a condensed account of the contents; but the fact remains that in over 400 pages, a very modest range of subjects is covered. The main explanation is that the exhaustive discussion of all the possibilities in various games with dice, cards and dominoes uses up a lot of space, especially when copiously illustrated by beautifully drawn, but most involved diagrams. Another reason is that certain topics such as the logic of significance tests are rightly dealt with at some length. Again, in the avoiding of mathematical elegance and "refined devices" the author sometimes veers towards the opposite extreme.

By contrast with the clear diagrams in *Mathematics for the Million*, many of the diagrams in this volume seem decidedly confusing, and it is difficult to believe that a high proportion of readers will be helped by such illustrations as Figs. 70–71 illustrating the "derivation of the mean-score distribution for the 3-fold toss of the tetrahedral die."

The mathematics in the first chapter, although not "advanced" are sufficiently difficult to invite the question whether a pupil capable of struggling through it would not be wiser to invest his time in the study of one of the more "advanced" text-books such as those by Professors H. Cramer, M. G. Kendall and A. Mood.

The most valuable part of the whole volume is contained in the discussion of fundamental ideas at the end of Chapter II and at the beginnings of Chapters III and V. Here, however, one is left puzzled by such a phrase as "One school prefers to identify the concept of probability exclusively with the frequency of external events. Another defines it exclusively with the frequency of correct judgements about them." The important dichotomy is surely between those who define probability in terms of frequency and those who define it in terms of reasonable degrees of belief. If the latter assert that the probability that there is life on the moon is greater than 0 but less than 0·5, they do assert that it is reasonable, while admitting the bare possibility of there being life on the moon, to believe, rather, that there is no life there. They do not assert that a judgment that there is life on the moon will sometimes be correct but not as often as five times out of ten.

Another page of this book which is well worth reading is page 179, where attention is drawn to the distinction between a finished mathematical proof and the hit-and-miss activities by which a theorem is originally discovered. It may well be that students could be spared needless discouragement if they were told more of the kind of reasons which lead one to expect a theorem to be true before they are confronted with the sophisticated and elegant proof which clinches the matter.

In one or two sections of the book there seem to be definite opportunities for improvement. On page 213 the explanation given of the "customary" distinction between confidence intervals and fiducial intervals, is so unorthodox as to be positively misleading. On page 136, the proof of the Poisson approximation to the Binomial distribution appeals quite unnecessarily to Stirling's Theorem, and a page is covered by what need occupy only a few lines.

Any attempt to apply new techniques to the teaching of statistics deserves a welcome, and it will be interesting to discover what type of student finds this book to his taste. The chief qualities required seem to be a powerful visual memory, intense curiosity and ingenuity, and immense capacity for taking pains.

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An Introduction to the Theory of Statistics. Fourteenth Edition Revised and Enlarged. By G. UDNY YULE and M. G. KENDALL. (London: Griffin, 1950. Pp. xxiv + 701. 34*s*.)

ECONOMISTS with statistical leanings will welcome with interest the appearance of this new edition of Mr. Yule's and Professor Kendall's classic work. The serious mathematician and the layman are both reasonably well served by existing statistical literature, but in contrast, the amateur of some but limited accomplishment finds few texts suited either to his taste or to his attainments. Mr. Yule and Professor Kendall have always tried to provide suitable nourishment for the presumably large numbers of people of moderate mathematical ability, but in fact their book is suitable for students with a rare and somewhat improbable combination of knowledge and ignorance. It is very doubtful whether many aspiring statisticians, equipped with the necessary mastery of algebra and of analytical geometry (not to mention determinants !) required to cope intelligently with this book, are at the same time entirely unacquainted with the calculus. Nor is it true that, because basic ideas in algebra are in general simpler than those in calculus, all algebra is necessarily easier than all calculus. A judicious and restrained use of calculus accompanied by some simplification of the algebra would do much to clarify some of the arguments in this book.

In the choice of subject matter, the book has also taken a middle course in previous editions. Very little indeed has been said about the foundations of statistical theory in the theory of probability and not a great deal more about the more practical aspect of a statistician's work other than computation. Professor Kendall's latest revision has gone a certain way in remedying the latter defect but no distance at all in respect of the former. There is still no more than occasional passing reference to the theory of estimation. Professor Kendall's main effort has, however, been directed to bringing the original treatment of the subject up to date.

The Theory of Attributes, which previously took up the whole of the first five chapters has now been compressed into three, but there are many people who will not be satisfied until this process has been carried a good deal farther. The chapter on the practical problems of correlation has been re-written and contains much of very great interest to economic statisticians dealing briefly, as it does, with the effects of grouping on correlation coefficients, nonsense correlations, the variate difference method and economy in the use of variables. In connection with the last-named problem, there is a brief mention of Confluence Analysis, but all reference to the main function of this analysis, that is to detect when the intercorrelation of the variables is making the estimates of the regression coefficients unreliable, is omitted.

The treatment of Analysis of Variance has been expanded to a full chapter, but for some reason Professor Kendall has only thought it necessary to give a brief explanation of the arithmetic required for this kind of analysis. This omission is inconsistent with the extended treatment given in other parts of the book, and is particularly unfortunate in that it is a subject which invariably causes difficulty to beginners.

The new chapter on the problems of practical sampling is especially welcome, and there is much interesting discussion of the different sources of bias. However, the theoretical parts of this chapter seem to be rather difficult for a novice, and the paragraph dealing with sampling fractions is a good example of the failure of an expository technique, which includes moderately advanced algebra but no calculus amongst its tools. The addition of a whole chapter dealing with Index Numbers ought to gratify economists, and in intention at least it remedies a notable deficiency. Nevertheless, the subject is an awkward one because it lies athwart the nebulous boundary between economics and statistics. Sadly enough Professor Kendall has tried to deal with the problem solely from a statistical standpoint, and students who read this chapter will merely get the idea that an Index Number is just "a sort of average." Perhaps in some later revision Professor Kendall will treat this very important topic more along the lines employed by the late Lord Keynes in his *Treatise on Money*. It is surprising, too, that no mention is made of the useful fact that a base-weighted price index multiplied by a current-weighted quantity index is equal to an index of value.

At the end of the book two chapters on Time Series have been added, and these fill the long-felt need for an elementary exposition of this subject. The first chapter deals in the main with the descriptive problem, and may be criticised on the ground that trend elimination by using moving averages is given an unnecessarily elaborate treatment while there is only a very short single paragraph on the elimination of seasonal movements. The discussion on the possible effects of trend elimination on the behaviour of what is left over should be read by all economists with a penchant for dabbling with "trend-free" time series.

Finally, in the chapter dealing with the theory of short-term and random components of time series, Professor Kendall gives skilful compression of a difficult subject in which he himself has done much pioneer work. Few people will cavil at his short discussions of the problems of periodogram and correlogram analysis.

In the rest of the text, Professor Kendall has made various additions " to keep . . . abreast of modern discoveries." Under this head fall such things as Gini's coefficient of mean difference, the rank correlation coefficient known as Kendall's τ and problems arising from errors of observation, while Snedecor's F has been called in to supplement Fisher's z test. Professor Kendall has also carried out other small acts of modernisation. The " semi-invariants " have become " cumulants "; " universe " has been replaced by " population "; and the " workhouse " has given way to the more socially non-committal " institution." The more usual summation sign Σ has replaced S throughout.

The critical remarks made here relate in the main to details, and should not be allowed to obscure the value of Professor Kendall's attempt to adapt still further to present-day needs Mr. Yule's earlier work. However, everyone with the best interests of both economics and statistics at heart would surely agree that it was never more important than now that undergraduate economists (*inter alios*) of moderate mathematical skill should be actively encouraged to pursue the theory and practice of statistics as far as is humanly possible. The text-book that enables them to do this has yet to be written. To be successful such a work will have to make many more concessions to the known mathematical limitations of its prospective readers than Professor Kendall has been prepared to do so far. It is to be hoped that he will undertake this worthwhile task in the not too distant future.

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Production and Welfare of Agriculture. By THEODORE W. SCHULTZ. (New York and London: The Macmillan Company, 1950. Pp. vii + 225.)

IN his Preface Professor Schultz describes the purpose of this series of studies to be to untangle the economic strands of American agricultural policy since the First World War, to make explicit its objectives and re-examine their meaning and to suggest, generally in outline form, alternative policies. The book is very definitely a series of studies rather than an integrated volume, as was his earlier *Agriculture in an Unstable Economy.* For this reason, and because he covers in a rather short space a very large number of subjects, necessarily touched on briefly, I found it less valuable than the earlier work. A number of interesting ideas are suggested; but they are not sufficiently worked out to do much more than indicate the general line Professor Schultz takes on current policy and problems. For someone like Professor Schultz even this is, of course, valuable. But I should myself have preferred to see some of his points worked out in more detail, even if this had meant omitting others.

Professor Schultz still holds to the view, cogently put forward in *Agriculture in an Unstable Economy,* that agriculture is, and will remain, a declining industry, in the sense that less man-power will be required in it. But not less capital; because of various natural and institutional difficulties which he outlines, mainly associated with risk, the capital available to farmers is rationed by factors partly distinct from its marginal productivity and cost, and its marginal productivity is low. More capital is needed, as one of the means to overcome what he considers to be the inefficiency of American farming. He also argues (mainly in Chapter 10) that agriculture requires more economic administration by Government; and a large part of these studies is devoted to considering what form this should take.

His main theme is the importance of separating two objectives, the optimum allocation of resources, designed to secure efficiency in production, and a redistribution of personal incomes, designed to secure greater equality. If price and production adjustments are used, as they were under the A.A.A. in the inter-war years, in order to protect farmers' incomes when these fall too low, then not only will benefits go to those who do not need them as well as to those who do, but also resources will, as a consequence, be maldistributed. This is not new; but in several places it is very well put.

Professor Schultz, designedly, devotes his main attention to the first problem. He does no more than throw out hints how the second is to be solved; in particular, he scarcely discusses the difficulty of separating out the two objectives. His solution to the first problem remains that of announcing forward prices to farmers designed to attract resources to the places where they are needed, of allowing the market to determine consumers' prices, and bridging any gap with subsidies (or levies?). In addition, returns to farmers should be kept up if general effective demand falls off. In the light of this policy he criticises not only the existing parity policy, but also the Brannan plan and other aspects of policy.

These are only a few of the topics touched on. It is impossible, in a review, even to indicate all the contents of such a very compressed book.

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The Economics of Public Finance. By PHILIP E. TAYLOR. (New York: The Macmillan Company, 1948. Pp. xxiv + 618. $4.50.)

Public Finance and National Income. By HAROLD M. SOMERS. (Philadelphia: The Blakiston Company, 1949. Pp. xii + 540. $5.00.)

IT is a practice among critics of gramophone records to compare the records upon which they are commenting with previous recordings of the same work, and there is much to be said for reviewers of text-books following a like course. Here also, the score is, roughly speaking, the same for all, and here also, therefore, the task of the reviewer is mainly to comment on the interpretations offered, as a whole and in respect of particular passages, and to draw attention to technical excellencies and deficiencies. What the reader wants to know is which, among the available alternatives, he should choose—often, whether a new performance is worth acquiring, given the one he has got.

The present reviewer's opinion is that neither of these works is as satisfactory as the *Economics of Public Finance*, by the late E. D. Allen and Professor O. H. Brownlee, which was the first text-book of what we ought, perhaps, to call "the New Public Finance" to come from the New World. Professor Taylor's is a stock performance: not much is left out, but motive force is lacking, there are no high-lights and much is blurred. Professor Somers is at the other extreme: his technique is first class, to a number of themes he brings fresh illumination, but the result is a collection of separate essays rather than a text-book of public finance. Advanced students can profit greatly from it, but as an introduction to the subject it is frightening.

The mark (of doubtful historicity) which distinguishes the "new" from the "old" public finance is, of course, the application of a theory of aggregates to government finance and government policy. In this country the third edition of Professor Pigou's *Study in Public Finance* has been given additional chapters on this subject, and Part III of Mrs. Hicks' Cambridge handbook deals with it. But it has been left to the Americans to put it in the forefront of their courses. Can this be done successfully, and if so, how? There are two serious obstacles. First, public finance is applied economics, but aggregate analysis being still a much-debated subject, there is the constant risk, throughout the dynamic parts of one's book, of losing the confidence of the reader in the economics that one is applying. Secondly, and again reflecting theoretical problems, there is difficulty in bringing the dynamic analysis of budgetary and debt policy and the static analysis of tax incidence and income distribution into a single, integrated structure. Messrs. Allen and Brownlee's way round these difficulties was to take a definitely normative view of their subject: the object of public finance was to serve public policy, which, for them, meant full employment, equity in the distribution of income and an optimum distribution of productive resources—or, in the terms of Mr. Crowther's *Economics for Democrats*, regularity, equality and efficiency. This method of approach immediately reduced the size of the second obstacle, since it is notoriously easier to prescribe what kind of budgetary policies should be followed in given circumstances than it is to analyse out the quantitative effects of individual measures. Also, their method provided them with a static analysis of expenditure to accompany that of taxation and so, with the added doctrine that flexibility in taxation is to be preferred to manipulations of expenditure for stabilising employment, a reasonable unity of subject-matter and analytical method was achieved. Both Professor Taylor and Professor Somers, however, have denied themselves this way of escape from their difficulties by taking up positive rather than normative attitudes to their subject. Professor Taylor does, in fact, shift his ground occasionally, but Professor Somers maintains an austere viewpoint throughout:

> "Government finance may be visualised as a powerful force which strikes the economy with considerable impact and spreads its effects through every sphere of production and consumption. It is difficult to visualise the magnitude of this impact. One method of approaching the problem is to follow through the points of contact of each instrument of government finance. A detailed consideration of these points of contact is the subject of this book as a whole" (p. 3).

Each author tackles the obstacles noted in his own characteristic fashion, but neither successfully overcomes them. In the choice of aggregate analysis, Professor Taylor draws heavily upon Hansen, using a simple, linear "leverage coefficient" embracing both multiplier and acceleration principle, without much indication that thereby many things have been left unsaid. Few students who have read any trade-cycle theory will get very far here without feeling dissatisfied or uneasy. Professor Somers, by contrast, provides a brilliant survey of contemporary trade-cycle theory, fully documented, with multipliers (six of them), acceleration principle, Ricardo effect and the rest. But while this will surely prove of the greatest use to the trade-cycle specialist, it seems to be of very limited worth for the practical matters in hand, and is altogether too much for the general student, who wants only the main essentials. Thus, neither author provides in this field that kind of finished answer, satisfactory to the expert yet simple enough for the tyro, which a good text-book in applied economics demands.

Fault is likewise to be found with both authors regarding the general architecture of their books. Both break up their central material into its technical divisions of taxation, expenditure and debt. Both then appropriate the analysis of aggregates to "expenditure," leaving resource-allocation and income-distribution to "taxation," and "debt" something of a rag-bag (Professor Taylor's rather the better). This is unsatisfactory. It is true that, by this device, an amount of space can at last be given to expenditure comparable to that which has always been allotted to taxation; but the division depends on a false simplification. Data and type of analysis do not pair off in this easy fashion. To each type of government activity both price and aggregate theory must be applied: the same tax or item of expenditure which alters the savings–investment gap also affects the profits and losses of particular firms and industries and the net incomes of different individuals and classes. For each level of analytical investigation and in respect of each class of political objective, all three constituents of a public finance system, taxation, expenditure and debt, must be looked into.

Now, in the case of aggregate analysis applied to employment policy, both authors do, in fact, recognise this. After dealing with the subject at length under the head of expenditure, each raises it again in his sections on taxation and debt, and each feels obliged, before the end of his book, to take it up once more under the unified head of "budgetary policy"—Professor Somers producing a valuable survey of recent literature in the process. But the other elements in public finance, namely, income-distribution and resource-allocation, are not explored in this fashion. True, Professor Somers undertakes an exhaustive, and in some respects novel, inquiry into tax incidence, but it is not very closely connected with the other parts of his book, and the rest of his " old " public finance is a collection of more or less independent departments. The same may be said of Professor Taylor.

It is right that the " new public finance " should not just be tacked on to the older matter, but both these authors, it seems, are disposed to go to the opposite extreme. They would let it dominate their whole approaches to the subject. Other concerns, such as the reform of the tax system and the rights and wrongs of social insurance or consumer-subsidies, though they must be commented upon in a text-book, are left more or less in the air. Of course, such a single-minded attitude yields an integrated system of sorts. But it is not the integrated system upon which a pure theory of public finance would insist; and, on a severely practical plane, while it might be held to be appropriate to present-day issues in the United States, it certainly does not fit the whole of the current problem of the United Kingdom. In this country, as we have somewhat painfully discovered, the new purposes (and effects) of public finance do not oust the old. The art is in combining both, and the student ought not to be allowed to forget this.

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Taxes and Economic Incentives. By LEWIS H. KIMMEL. (Washington, D.C.: The Brookings Institution, 1950. Pp. 217 + x. $2·50.)

THE object of this book is to discuss the effects of the main taxes levied in the United States on the supply of enterprise, capital and labour. Separate chapters are devoted to the Corporate Income tax, Personal Income taxes, Sales and Excise taxes, Property taxes and Payroll or Employment taxes. The concept of taxable capacity is discussed at some length, and suggestions are also made for rationalising the United States tax structure by such measures as dovetailing the Corporate and Personal Income taxes and tidying up some of the more anomalous provisions of the Capital Gains tax.

Some of this discussion is extremely useful. It is particularly refreshing to see the outlines of the American tax system clearly without having to search through the usual fat tome. The author's treatment of incidence is succinct, and yet he does list most of the pros and cons on such thorny topics as the shifting of the Corporate Income tax.

But in its main purpose "to appraise the principal taxes now employed from the standpoint of their effects on economic incentives" the book cannot be judged successful. By leaning heavily on a questionnaire sent out to 1,000 business-men about the effects of various taxes on incentives, the author lays himself open to two major charges. The first is that he produces no evidence at all about the sampling properties of the inquiry. It *may* be that the 1,000 business-men questioned were selected by correct techniques of stratified sampling, and it *may* be that the 200-odd who replied were a microcosm of the 800 who did not—but not a word is breathed about such points. Secondly, even if we are prepared to accept the statistical techniques without flinching, it is surely naïve to take the replies as they stand. How can the business-man possibly know whether State Sales taxes (p. 136), rather than the host of other possible factors, have cut down his sales? How much reliance can we put on the business-man's own analysis of his motivations? There is surely a strong presumption that he will answer what he thinks he is expected to answer, possibly based on some dim recollection of what he learned at the Harvard Business School twenty years ago. And is it so malicious to suggest that, if he knows that answers to questionnaires from the Brookings Institution have a way of appearing in books and publications of various sorts, he may be tempted to use this free method of influencing public opinion about the inadequacy of depreciation allowances (p. 51). In short, the answers to a questionnaire of this sort may throw little or no light on the motivations of past or future courses of action.

In the more theoretical parts of the book, there are a few peculiar omissions. Chapter I on "Taxable Capacity" harks back to the sort of arguments produced by Lord Stamp and others in the 1920s, but does not mention Colin Clark's empirical investigation into taxation/National Income ratios, published in this JOURNAL a few years ago. Nor is it easy to see why the maximum tax/National Income ratio is necessarily higher in a rich than a poor country once the importance of the purely transfer nature of much government revenue and expenditure is fully recognised. A valid argument might be that in poor countries social services and transfer payments are not usually highly developed, and therefore people are not used to more than a small proportion of income being paid over to the Government—but this is not brought forward in the text. Then the discussion of depreciation allowances and inventory valuations for tax purposes is very superficial. The conventional journalistic arguments about the inadequacy of tax allowances in times of rising prices are all produced, but there is no attempt to separate the wheat from the chaff by considering, for instance, the high rate of net investment in the post-war period and the consequential large additions to accumulated depreciation funds.

Nevertheless, despite these omissions, the book may be found useful by readers as a quick summary of the present state of tax regulations and rates in the United States.

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The Cost of Distribution of Consumption Goods in Australia and Elsewhere. By S. J. LENGYEL and R. M. BEECROFT. (University of Melbourne (London: Wadley & Ginn), 1949. Pp. vi + 184. 35*s*.

IN 1946 the University of Melbourne planned a series of publications dealing with the economics of distribution. The first of the series was the pamphlet *Problems of Distribution in Australia*, which dealt generally with the need for a Census of Distribution. This is the second publication, and here an attempt has been made to assemble the facts which will, the authors hope, be used as a basis of a third publication outlining a policy on distribution. The Faculty of Economics and Commerce of the University deserves every credit for encouraging research in this most complex and important sector of our economic life, and Messrs Lengyel and Beecroft have here provided us with a useful addition to the small library on this subject.

In the first part of the book the authors discuss the problems, methods and costs of distribution, illustrating where possible from experience and data in Australia, the United Kingdom, the United States, Canada, South Africa and occasionally European countries. The second part of the book consists of studies of the costs of distribution of some twenty main groups of consumer goods. The costs considered are those of wholesalers and retailers giving where possible both mark-ups and operating costs, and in each instance presenting roughly comparable information from up to six countries alongside the data relating to Australia. War-time price-control orders in the different countries have been used as the main source, and these have been supplemented by published data from cost and census investigations in different parts of the world such as the returns of the Retail Distributors

Association in the United Kingdom, Dun and Bradstreet's surveys in the United States and the Canadian Census of Merchandising Establishments. Some hitherto unpublished information based on the experience of Australian wholesalers and retailers is also presented, though unfortunately no indication is given of the nature of the samples taken. The years covered, for the most part, are 1939–45, using earlier data where available and relevant.

The collection of this material from so many varied and, in some instances, unco-operative sources is evidence of the initiative, extensive research and knowledge of the authors, but the final result must be described as rather unsatisfactory. It is true, as Professor G. L. Wood suggests, in his Introduction, that research in distribution, like mining and exploration, is both exciting and frustrating. Every student of the subject knows these feelings, but in this instance the authors and publishers must be held responsible for part of the frustration experienced when reading the book.

The attempt to cover in 25,000 words in the first part of the volume practically the whole gamut of distributive questions from black markets to basing-point systems, from voluntary wholesale groups to fallacies of percentage margins, results, almost inevitably, in disjointedness and oversimplification. While certain sections, for example that on manufacturer's marketing functions, are well argued and show a very sound grasp of the pitfalls of the subject, other sections, often containing quotations and tables, are either misleading or so concentrated as to convey little to the reader. The "excitement," for example, of reading and studying the section giving information and tables of the increase in employment in the distributive trades in different countries turns rapidly to frustration when after only three short pages and with a number of questions in one's mind about the comparability of the figures the reader turning the page finds himself plunged into a 500-word discussion of restraint of trade. The complications of the subject and the inherent value of the research done deserved a smaller canvas and less-hurried writing.

The second part of the volume is narrower in scope, and the studies read interestingly. But again more care in distinguishing clearly between the evidence from different countries and in giving in every case the operative dates of the various price orders would have greatly enhanced the value of the volume as a source book.

Finally, reference must be made to the production of the volume. To speed up publication photographed typescript has been used without, apparently, any proof reading whatsoever. A casual count has shown over fifty obvious errors in the text, including some of figures and references. When figures and extracts and tables from other publications form such an important part of the study such carelessness is almost inexcusable. Certainly students wishing to use the data must be advised to check with the original sources.

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Management Research in Retailing. By H. PASDERMADJIAN. (The International Association of Department Stores. (London: Newman Books), 1950. Pp. xii + 177. 16*s*.)

THE activities of the International Association of Department Stores—a society for management research—are little known in this country, and this volume by the Secretary of the Association is of value in going some way towards filling this gap.

The Association, founded in 1928, was one of the many scientific management research groups of both national and international flavour which sprang up in Europe in the somewhat hot-house conditions of the middle and late twenties. The best known of these was the International Management Institute of Geneva. But in the stormy economic and political climate of the thirties acts of faith—and Dr. Pasdermadjian suggests that any initiation of research implies an act of faith—were rare, and the International Association of Department Stores is practically the only body that has a record of continuing membership and activity since the optimistic days of the twenties.

The reasons for this success are many. One factor was the relatively limited scope of the Association. In twenty years' history the maximum number of members has been ten and the minimum, at foundation, four. At present the membership numbers eight, drawn from that number of European countries. No British store is now a member, though both Messrs. Schoolbred and Harrods have been associated with the work. The smallness of numbers arises from the deliberate policy of restricting membership to one store from each country, in the belief that the essential frankness and openness could be secured only if no direct competition existed between the firms. But without delving further it is obvious that the success of the Association was primarily due to the fact that it fulfilled a need and assisted member firms to operate more efficiently and profitably.

An appreciation of this is gained from the interesting description of the method of operation of the Association. Bi-annual meetings of top executives were followed, as confidence in the Association grew, by meetings of research managers, controllers, merchandising, sales promotion, store and personnel managers. Particularly important and instructive were the so-called critical store visits, when the chief executives of all the member firms visit one of the firms and make an on-the-spot investigation lasting several days with the object of offering suggestions to the firm as well as learning themselves. Regular statistical exchanges, and with them the hammering out of standards of comparison, have been a major activity, and in this connection the list of physical operating standards and financial operating standards given on pp. 38–9 is of considerable interest and value.

Less satisfactory from the angle of judging the actual success of the Association is the account of the work done. A considerable section is devoted to a discussion of the general principles of scientific management and of the improved methods of organisation introduced by member firms. This discussion is far more readable and realistic than most outlines of the subject, though even here we get a measure of the usual pontifical quotations, jargon and mumbo-jumbo about functions, sub-functions, co-ordinate contacts and such like cheek by jowl with detailed suggestions which make the reader think he has stupidly missed some hidden problem. On page 101, for example, we are solemnly told :

> "The daily number of visitors is easily determined by having a recording meter at each entrance. The total number of visitors in the store can be obtained by posting at each entrance an additional checker, recording the number of visitors leaving the store. At any given time the difference between the totals of the observers recording the entrances and the totals of those recording the exits gives the total number of customers who are in the store."

These irritations would be of minor significance if the reader was told what happened next and was given facts and figures; if he were told exactly what effect the introduction of functionalisation had on the buying and selling policy and on the results of a firm, or, after a check has been made on the numbers in a store, to what specific use and with what results was the information put by different stores at different times. The answers to these and the many other questions that arise no doubt lie in the archives of the firms or at the Association office, but a great opportunity would appear to have been lost of going beyond generalisations on scientific management to a detailed assessment of the results of the use of different techniques and programmes in varied settings. The historian and the economist will also regret that no indication is given of what twenty years of changing economic conditions have meant in terms of organising, capital, merchandising and labour policy (though there is a revealing hint that less attention was paid to scientific management principles during the recent sellers market (p. 81)) or whether the experience of the Association provides any answer to the suggestion that department stores have reached the limit of their expansion.

The need for secrecy regarding actual trading practices and results and the smallness of the sample may have precluded the author from attempting these tasks. And within the limits indicated Dr. Pasdermadjian has given us a most useful and readable handbook on scientific management in retailing and on the problems of mutual international help on business problems. But a plea can be made for the publication at some future date of economic and statistical case histories of these pioneer firms to enable a clearer judgment to be made of the workings of scientific management and the trends in retail trading in different countries.

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Price Control. Government Intervention or the Free Market? By F. R. J. JERVIS. (London : Hutchinson's Scientific and Technical Publications, 1949. Pp. 224. 12*s.* 6*d.*)

Individual Firm Adjustments Under OPA. By S. S. MCMILLAN. (Bloomington, Indiana : The Principia Press, 1949. Pp. xv + 256.)

DURING the last ten years immense experience has been gained in the administration of price control in many different countries, and a detailed study of the economic effects of the various measures would be of great interest. Although Mr. Jervis and Dr. McMillan are both concerned with aspects of this subject, neither has attempted to grapple closely with the major economic issues raised by the policy. Still, their books are useful, and it would be ungracious to criticise authors who have had certain purposes in mind for not having written with different intentions.

Mr. Jervis covers a very wide field in his little book. After a brief exposition of the functions of the free market price, he proceeds rather breathlessly to survey the extensive region in which its operation is now subject to some form of control. Government intervention in the price policy of public-utility enterprises, the regulation of commodity prices by associated producers, Government control over retail prices and rents, the substitution of bulk buying by the State for private trading in the commodity markets and Government restrictions upon private profits, all these come under review. The main facts are concisely set down, and the consequences of the departure from the principles of a free pricing system are clearly expounded. The wide range of topics with which Mr. Jervis deals leaves him little opportunity for probing deeply into the operations of these controls; but his book should be useful for the general reader or elementary student who wishes to inform himself of the nature and extent of Government interference with market processes during recent years.

Mr. Jervis writes as one who abhors the controls that he describes, and his book is in the form of a polemic rather than of a survey. This gives forcefulness to his exposition; but he sometimes does less than justice to the practical difficulties which led to the imposition of the controls. For instance, even though one may accept most of his criticisms of retail price control, one is left unconvinced that its effects have been wholly mischievous. In the first place, it is misleading to ignore the part that price control may play in checking the development of the wage–price spiral, and a realistic treatment of the subject requires a direct approach to the question whether the unfortunate effects of price control on the disposition of resources and on production outweigh the probable consequences of uncontrolled inflation. It is easy, but not very helpful, to argue that the reduction of the inflationary pressure is the proper solution. In the context of general economic policy this may be true enough; but what one really wants to find in a book on price control is a discussion of whether price control, *given the inflationary situation*, is on balance beneficial. In the second place, it is impossible to understand the working of price control in this country during and immediately after the war, unless one realises that it was merely one part of a system of controls, each of which reinforced the other. During the last two or three years the price-control machinery has operated with growing difficulty because many other controls, formerly associated with it, have been abandoned, and price control has been left to perform tasks beyond its powers.

Dr. McMillan's book is of a very different type. The author was a prominent member of the Office of Price Administration during the war, and in the light of his experience he has reviewed the administration of what was called in the United States "individual firm price adjustments" as distinct from "general or industry-wide actions." In the United States, as in this country, the general measures included the imposition of "price freezes," the issue of orders which laid down maximum cash prices or margins, and the provision of "formulas" by which sellers could calculate the maximum legal prices of their goods. These general measures, especially those that fell under the first two heads, sometimes led to hardships for individual firms, or seriously interfered with the supply of essential commodities. So, in order to introduce flexibility into the price-control system, it was necessary to set up machinery for dealing with the prices of particular firms in cases where the general "ceilings" were inappropriate. In the United States an elaborate organisation was created and a body of rules worked out for handling these cases, and Dr. McMillan's book is mainly concerned with a detailed examination of this part of the price-control system. In Great Britain this problem was normally dealt with by the issue of directions, under the various Price Control Orders, to individual firms. What surprises the English reader is the vast number of "individual firm adjustments" found necessary in the United States; the author estimates that up to June 1946 there were over 100,000 cases and that 55,000 of these were handled in less than two years. The problem at no time assumed anything like this prominence in Great Britain, and the striking contrast between the experience of the two countries in this respect doubtless depended partly on differences in methods of price control and partly on differences in the economic conditions with which the administrators of the policy were confronted.

Dr. McMillan's account brings home to the English reader, first, that at the centre of government the functions of price control were much more highly concentrated in the United States than in Great Britain, where during the war they were shared among many Government Departments, and second, that greater administrative discretion was given in the United States than here, especially in connection with the delegation of authority to "field offices." The author is satisfied that price control played an important part in checking inflation; but his analysis of economic consequences is not carried very far, and his book throws more light on the administrative problems than on the perplexing economic issues raised by the policy. Nevertheless, he has made a useful contribution to the economic history of the Second World War.

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Die Selbstregulierung der Zahlungsbilanz. By EMIL KÜNG. (St. Galler Wirtschaftswissenschaftliche Forschungen, Band 5.) (St. Gallen : Verlag der Fehr'schen Buchhandlung, 1948. 9½″. Pp. x + 256. S. fr. 25.)

Two thoughts struck the reviewer on laying down this book. The first was that contemporary theory has remarkably little to say on the way in which the level of prices is related to the level of employment. In multiplier-analysis the conventional assumption is that prices are constant, at least until full employment is reached. Until it is, incomes have to bear the whole strain of domestic and international adjustment; thereafter price-movements take over. The formal theory of the way in which the two co-operate is, to say the least, somewhat sketchy.

The second thought (largely prompted by a series of discussions with Dr. J. S. Pesmazoglu) was that imports are too frequently treated as though they were simply "induced" items, depending passively on the level of income in the importing country. This may be a legitimate way of looking at imports of consumers' goods, but imports of investment goods (which comprise quite a large proportion of total imports in the real world) are surely as autonomous as investment itself. Whether they are most conveniently regarded as depending on the level of income, the rate of change of income, the expected rate of profit or something quite different is a question not yet settled. But it is beyond dispute that increased imports, far from being a mere "leakage" from the circular flow, often constitute an essential pre-requisite for increased investment. The history of E.R.P. bears ample witness on this point.

These are criticisms of contemporary theory rather than the book under review. Indeed, Dr. Küng has threaded his way with rare skill through the many difficulties which inevitably beset anyone trying to give a reasonably complete account of the working of the balance-of-payments mechanism in an uncontrolled economy. He expresses few views of great originality; but his touch is uniformly sure, and—whether he is describing the idiosyncracies of the classical gold standard or the complexities of currently fashionable multiplier-analysis—his exposition is admirably lucid. Among professional economists theoretical virtuosity is all too often coupled with a startling naïveté, but Dr. Küng is refreshingly free from illusions about the remoteness from reality of much of the formal theory he elucidates. His book can be warmly recommended to anyone with a reading knowledge of German.

J. DE V. GRAAFF

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Ricerche sui contributi inglesi alla teoria della moneta. By ERALDO FOSSATI. (Florence : Casa Editrice Del Dott. Carlo Cija. 1940, Pp. 263.)

THIS, the first volume of a study of the development of British monetary theory between 1797 and 1844, covers the years from 1797 to 1811. From the theoretical standpoint this earlier period is in many ways more interesting and important, and has been less closely studied, than the later period which led up to the passing of the Bank Act of 1844.

Professor Fossati attributes the main credit for establishing the theory of money and bank credit on sound lines to Walter Boyd, Henry Thornton, Lord King and John Wheatley, all of whom wrote books or pamphlets of outstanding merit between 1800 and 1803. It was these writings which formed the basis of the important Report of the Parliamentary Committee on monetary conditions in Ireland, which was published in 1804, and which anticipated in matters of fundamental doctrine so much that appeared six years later in the far more widely known Bullion Report of 1810. He says of the Irish Report that—

> " it is of great value for the theory of money as it confirmed principles which had been enunciated in recent writings. The depreciation of money as indicated by the rate of exchange and the high price of gold; the quantity theory established to clarify the relation between money and prices; the mechanism of the exchanges, with the determination of the limits of fluctuation under conditions of convertibility; the balance of payments as one of the elements influencing the exchanges; deflation as a means of raising the value of the currency in circulation—these are henceforward principles which have been acquired by economic science within the brief space of four years."

He also accords high praise to the work of Leslie Foster (1804), William Blake (1810), and, for certain important aspects of the effect of credit upon prices, to Dugald Stewart (1811). In general, he holds that the originality of Ricardo's contributions to monetary theory has been exaggerated by subsequent writers. As only one example of this, the purchasing power parity theory of the exchanges was formulated for the first time by John Wheatley, several years earlier than Richardo's own contributions on the subject. In certain respects the work of Ricardo was less creative and indeed less far-seeing than that of some of his immediate precedessors and contemporaries.

Professor Fossati has made a very useful addition to the literature of the history of economic doctrine in the special field of monetary theory. His book is well and clearly written, and the extracts from the writings of the period are excellently chosen. His own critical comments add appreciably to the value of the work.

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The United States and the Restoration of World Trade. An Analysis and Appraisal of the ITO Charter and the General Agreement on Tariffs and Trade. By W. A. Brown. (Washington D.C. : The Brookings Institution, 1950. Pp. xiii + 572.)

The purpose of this study of the I.T.O. Charter and of the General Agreement on Tariffs and Trade is " to examine these two international instruments, to trace their historical origins, to clarify and explain their provisions, to place them in their contemporary setting, and to evaluate them as instruments of United States foreign economic policy." This last part of the study, in which the author gives reasons for his personal view that the United States should ratify the I.T.O. Charter, comprises only a small part of the total. Some 170 pages (nearly one-third of the book) are devoted to an appendix containing the text of the Charter, with minor omissions and verbal changes, re-arranged in a manner intended to facilitate its detailed study. The text consists mainly of a painstaking, factual analysis of the historical origins (including a long account of the negotiations in London, New York, Geneva and Havana), of the exceedingly complicated provisions of the Charter and of the General Agreement, of their relation to each other and to the United Nations machinery, and of the legislative and administrative action required by the United States if the Charter is ratified.

Since the author does not shirk detail, the book is necessarily long, somewhat repetitive and at times heavy going. But it undoubtedly helps the reader to a proper understanding of the basic documents. It shows the significance, which might otherwise be misunderstood or overlooked, of particular words and phrases, often adopted only after long debate. The account of the negotiations will be of particular interest. The author was an official of the Department of State when the ideas that led to the negotiation of the Charter were first being developed, and he attended the Geneva and Havana conferences as an observer for the Brookings Institution. He has also worked through the mass of documents available at U.N. Headquarters relating to the negotiations. The summary he gives of the discussions will be of considerable use to the student of the Charter. His sorting out of the main issues raised and his listing of the arguments used by different countries provide raw material which may prove stimulating to the international trade theorist. His account illustrates the difficulty of reconciling divergent philosophies and the interests of some fifty sovereign states without fatally weakening the resulting agreement. He does not fail to emphasise the departures from liberal trading principles contained in the Charter to suit United States requirements, in particular, the " comprehensive provisions for special treatment of trade in agricultural products, which would allow the U.S. as a member of the I.T.O. to continue its agricultural two-price system." A recurring theme in the book is indeed the " basic conflict " between United States foreign and agricultural policy.

There is an interesting account of the experience to date of G.A.T.T. Quite apart from negotiating reductions in trade barriers, the contracting parties have been called upon to deal with a considerable number of special problems, including complaints by Cuba about the reduction of preferences granted by the United States, by Czechoslovakia about United States export restrictions, by France about Brazilian consumption taxes, by Pakistan about discriminatory internal taxation in India, by the United States about import regulations in Cuba, and applications from Brazil for permission to withdraw tariff concessions, from Ceylon and other underdeveloped countries for permission to impose or retain quantitative import restrictions for economic development, from the United States for permission to grant new preferences to the Marianas, Caroline and Marshall Islands (an application criticised by the author). Some of the decisions made may be taken as precedents by the I.T.O. if it comes into being. The author concludes that the experience of G.A.T.T. " proves the usefulness of an international forum in which countries work out problems relating to commercial policy under agreed rules and procedures."

In a final chapter the author discusses four main courses of action open to the United States if the Charter is rejected. One would be a return to bilateral negotiations under the Trade Agreements Programme, and another the use of G.A.T.T. as the principal instrument of United States commercial policy. A third would be an attempt to re-negotiate the Charter to secure a better document from the United States point of view; the author is rightly sceptical of the possibilities. A fourth would be resumption of full freedom of action; here the author describes a school of thought in the United States that would seem to advocate "an aggressive trade war against all countries that do not accept 'liberal-capitalist' ideas and methods."

But there is little language of this type in the book. It is almost wholly a sober, factual analysis. The reader must not expect to find in it a full treatment of all the puzzling problems of international trade that have been raised in recent years; certain issues that have aroused considerable controversy are hardly mentioned. The book is of value mainly as "a permanent and definitive record of the most comprehensive series of international economic negotiations ever undertaken."

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Human Behaviour and the Principle of Least Effort. By G. K. Zipf. (Cambridge, Mass.: Addison-Wesley Press, 1949. Pp. x + 573. $6.50.)

Dr. Zipf, in this "Introduction to Human Ecology" maintains that in human organisation and behaviour a distribution of values is frequently found such that the highest to the lowest values follow one another in series according to a particular formula. This formula, which is one of harmonic progression (or rather degression) type, *e.g.*, 100, 50, 33⅓, 25, 20 . . ., holds when items are ranked in order of magnitude. It applies, according to Dr. Zipf, to such diverse phenomena as individual's incomes (where he claims to correct the Pareto formula), the largest cities of a country ranked in the order of their population, industries ranked in order of their number of establishments and words ranked in order of the frequency of their use, even (pp. 25 ff.) by James Joyce.

Up to this point we can follow Dr. Zipf, though verification would be easier if he gave more names, times, places and figures instead of graphs. Undoubtedly there are certain distribution formulæ followed by human organisation and events; the normal Gaussian distribution is one. But where we cannot follow him is in supposing the harmonic distributions he has disclosed to be in some special sense unïque, nay, almost mystic in quality; or always to depend on a principle of least effort.

Dr. Zipf's data are mainly of the type where the frequency distribution is positively skewed, that is to say there are only a few items with large values but many with small. There are, for instance, few very large towns but many small towns and villages; a few industries with very many plants, many with only a few; and, of course, few rich men and many poor.

The double logarithmic charts comparing theory and empirical data look convincing, because points are placed in order of their magnitude, largest first from left to right. The curve is therefore bound to slope downward to the right. And the points farthest to the right, where values are small and items many, will show by this very bunching a strikingly continuous curve.

The particular interest of Dr. Zipf's book to an economist is the extreme "economic man" interpretation he uses to explain his series. His argument summarising the distribution of economic power and social status in terms of income and wealth (on p. 500) is that "a person is always economical, and that it is always economical for a person to procure some one else to do his work for him." It is difficult to pin down Dr. Zipf to a precise application of his theory, but one gathers that a bureaucratic élite gets an inferior class to do its work at a lower income, that class in turn a sub-inferior class, till the process of delegation and exploitation at lower and lower wages reaches the bottom sub-sub-sub pariah class. There is thus a succession of income levels, for some reason harmonic in series. This succession also apparently applies to incomes and the wealth of groups and institutions, *e.g.*, the assets of corporations.

Economic and political status certainly presents the hierarchical principle of the greater the fewer, the humbler the more frequent; but whether the humbler always increase precisely on the Zipfian formula and if so, why, remains still to the reviewer an open, though certainly interesting, question. The answer worked out in this book is perhaps something more than just a *mystique* or a King Charles' head and may incidentally prove useful. The non-Gaussian, highly skewed distribution is fairly frequent in economic behaviour. Besides Zipf's instances there are the shareholdings in Joint Stock Companies; the sizes of factories in any one industry or manufacturing generally; the sizes of localised production centres in any industry. Here averages and deviations from average are of little significance, if not positively misleading, and other methods must be found of summing up the general level, the degree of variability and the shape of distributions. The harmonic series, with its relatively thick long tail, certainly resembles the shape of much human behaviour and organisation. Comparison of observed facts with some theoretic series of this type used as a standard may well bring order, perspective and analysis into what are now mere detailed descriptions.

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Teoria de la Politica Social. By MANUEL DE TORRES. (Madrid: Aguilar, S.A. de Ediciones, 1949. Pp. xxiv, 314. 80 pesetas.)

IN his prologue Professor Torres tells us that he has sought in the *Theory of Social Policy* to discuss the economist's contribution to formulating the ends of social policy and to analysing the means whereby they may be attained. As regards the goals of policy, he considers that decisions here should be left to the political authority guided by current sentiments and opinions. For all that, Professor Torres does have in mind a very definite aim for social policy: the redistribution of income. Indeed, policy is "social" for the most part where it involves some redistribution of income. Nonetheless, while the book centres on this problem, we are not told how great a redistribution is envisaged. A movement of income towards entrepreneurs is considered to be bad, and one towards wage-earners good.

The yardstick whereby Professor Torres measures the redistribution effect of a policy is its impact on profits. In consequence, his macro-economic theory of profits has a crucial rôle to play. Profits are held to be equal to investment minus savings. The basic assumption underlying this conclusion is the rather odd one that the outlay of entrepreneurs as a whole consists of payments for capital and labour used in the consumption-goods industries only. Unfortunately this assumption is not discussed; and, indeed, it appears to be at variance with Professor Torres' useful exposition of the real and monetary flows in the economy.

The subsequent chapters contain, for the most part, discussions of different policies in the light of their effects on distribution. Thus in the chapter on full employment, Professor Torres briefly outlines the difficulties of defining full employment and then proceeds to discuss full-employment policies and redistribution. Policies stimulating investment raise employment, but they also raise profits—savings being assumed to remain constant or to rise less than investment. This increase in profits is interpreted as indicating a shift of income towards entrepreneurs. Thus efforts to raise employment through stimulating consumption are considered to be best, although much will depend on current circumstances.

This conclusion as to the compatibility of redistribution and full-employment policies is used to support the advisability of the former. The argument is that measures for redistribution can be used to stimulate employment, and that full employment ensures maximum production. There is, however, no discussion of incentives and productivity.

Professor Torres sets out carefully the various forms of redistribution and discusses the means for achieving them. There is, first, qualitative redistribution which involves direct control of consumption. This raises the great issue of how far the State should go in curbing the individual's freedom, but unfortunately he considers this to be beyond his terms of reference. Functional redistribution is carefully examined, but is not favoured, as it shifts income from class to class and not necessarily from rich to poor. Lastly, there is quantitative or personal redistribution. Professor Torres probes carefully into the causes of personal inequality of incomes, but he does not examine so thoroughly the ways of changing this inequality.

This concludes the general section of the book. In the second part, there are a number of chapters on various aspects of social policy : wages policy, the financing of social security, profit-sharing schemes and agricultural policy. These chapters contain much that is of great interest, but one may perhaps be justified in being hesitant about some of the author's more precise conclusions on such complex problems. Thus there is much truth in the assertion that a general rise in wages benefits entrepreneurs only; but assumptions should be made more clear. The examination of the various means of financing social-security measures is a careful essay on a difficult subject; but can we really be as certain as is Professor Torres on the difficult problem of the incidence of taxation and of other special levies? On the other hand, there is a most interesting chapter on the vicissitudes of the profit-sharing movement on the Continent; and a brief but informative sketch of the structure of Spanish agriculture.

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New Worlds Emerging. By EARL PARKER HANSON. (London: Gollancz, 1950. Pp. xx + 385. 16*s.*)

MR. HANSON is by training an engineer, but by experience and inclination he is a geographer who has acted as expert consultant and explorer in several tropical and arctic regions. On the basis of these experiences, he sets out enthusiastically to refute the assertions of "academicians"—soil scientists, geographers, meteorologists and agronomists—that these frontier zones are unfit for white settlement. With a wealth of illustration, he points out repeatedly that shortages of labour (white or coloured) and capital, not climatic factors, have inhibited development in the past; wherever these shortages are remedied, there are "new worlds emerging."

This early part of the book, which sweeps from continent to continent surveying agriculture in the Arctic, settlement in the rain-forest and industrialisation in the Caribbean, makes fascinating reading. But Mr. Hanson believes other experts to be in error, and he undertakes to answer the prophets of secular stagnation as well as those "Neo-Malthusian Jeremiahs" who foresee a future ruined by an exhausted and over-populated land. The new worlds emerging, he believes, provide both outlets for the savings of mature economies and overflow areas for the excess workers of densely populated countries.

Against secular stagnation he presents a convincing case. In all areas he distinguishes three historical periods: first, primitive agricultural quiescence; then colonial-imperial growth (during which foreign investment is applied extensively in the hope of high remitted profits); and finally advanced industrialisation (financed by intensive foreign and home investment, protected by tariffs and nationalistic controls and accompanied by secondary and tertiary enterprises). In this third period it is necessary to educate both native labour and foreign investor, the former in techniques and government, the latter in concepts of decent treatment of coloured labourers and respect for their institutions. Although Mr. Hanson shows an unfortunate inconsistency in his attitude to exploitation, blessing it in Siberia and Liberia, and cursing it in Puerto Rico and the Amazon, it is not difficult to share his faith that there need be no secular stagnation for the lack of new frontiers.

His direct replies to the Malthusian hypotheses of Vogt and Osborne are not so convincing. These writers have earnestly advocated widespread birth control and wholesale soil-conservation measures to prevent an otherwise inevitable future coincidence of swollen populations and land exhaustion. While each of the areas discussed by Hanson has interesting possibilities for expansion, he has not shown that taken together they can produce enough food or support enough immigrants to prevent the disaster. For example, his enthusiastic description of the Amazon basin is punctuated with damaging admissions of its limitation to cattle and forest cultures—hardly scope for the support of large populations; while his chapter on Alaska certainly fails to carry conviction that this territory can support the ten million persons one of his sources claims. Northern Canada is not discussed, and the economic arguments about Africa hang by analogy with his Liberian experiences, and seem to depend on his peculiar conviction that alternative sources must be found for the raw materials produced in the British Empire. The optimistic suggestion that our century parallels the age of exploration of the fifteenth and sixteenth centuries violates the caution and consideration he recommends to other specialists.

Mr. Hanson's book is an enjoyable onslaught on long-cherished myths about the rigours and impossibilities of settlement in the non-temperate zones, and a stimulating sketch of the maturing industries of the tropical states. While his counterblast to the Malthusian prophets does destroy part of their flimsy argumentative structure, it does not provide the needed point-by-point evaluation of the confused pictures of uncurbed population growth and resource exhaustion.

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Negroes in American Society. MAURICE R. DAVIE. (New York and London : McGraw-Hill, 1949. Pp. ix + 542. 38*s*. 6*d*.)

THIS is an excellent survey by a leading American sociologist of what may be termed the " Condition of the American Negro Question " in all its ramifications. The American Sociologist, social worker and administrator—as well as the American statesman—can take great credit for the thought and the care he has lavished on this problem during the past generation, and for the results in terms of better standards of living and of behaviour which are now beginning to emerge. These facts are not as well known as they should be in this country, and a work of reference in which they are contained in a small compass has a special value to the British reader.

The bulk of Professor Davie's work is devoted to historical and sociological analysis of the position of the Negro in American Society. On such subjects as the Family, Education and Housing it provides an excellent summary of the available information and of the conclusions of contemporary authors. The book also contains a temperate but unflinching account of much more explosive topics, such as lynching and Jim Crow Legislation. It is well informed (save in a brief passage relating to the West Indies) and accurate. Moreover, the author has obviously identified himself with the Negroes in his own community and seeks at every turn to point out the most suitable paths towards further progress.

It is, therefore, very reassuring that Professor Davie's conclusions as to future probabilities are, on the whole, optimistic. The Negro has been steadily gaining in political power during the present century, and the Supreme Court has given more and more attention to redressing his grievances. Improvements in social attitudes are evidenced by gains which have been made in education and in employment and by the social recognition which leading Negroes are steadily acquiring for themselves. The policies of the enlightened Trade Unions and of the C.I.O. are, indeed, in the direction of the complete elimination of the "Negro Problem" in the industrial field. Even in the South, Professor Davie concludes that the trend in race relations is "towards equalisation within the framework of segregation." So far as his standard of living is concerned, the Negro has benefited by the general improvement which has taken place in recent years from South to North, from agricultural to industrial employment and from countryside to town.

The keynote of Professor Davie's treatment of the whole subject is, indeed, that the future may be faced with confidence if attention is concentrated on the improvement of the social framework rather than on moral exhortation to humanity and over-emphasis on guilt, particularly of the Southern variety. The diminution of the Negro's poverty gives him an excellent illustration of this theme because the "significant trend in Southern regional planning is that of improving the conditions of all the people together. . . . A long-term programme of industrialization and improvement of facilities for communication and mobility might well do more to reduce hostility between Negros and whites in the South than the most elaborate attempts at education and propaganda."

Professor Davie, therefore, criticises the appeal which Dr. Myrdal made in *An American Dilemma* to individuals to amend their values and attitudes. This, he argues, involves the fallacy that the Negro problem is primarily a moral rather than a social issue and underestimates the importance of the irrational in human behaviour. The problem is, in his analysis, rather to readjust the institutional structure of society so as to make it more difficult for the ordinary man to adopt two conflicting codes of behaviour in relation to his White and Negro fellow citizens, as the Southern visitor to the North finds it possible to do only too easily. The " direct " approach is attractive because it seems to make it possible to " get something done now "—the " indirect," operating through such expedients as Fair Employment Practices legislation, takes longer to produce an obvious result, but it is the method which " sticks." We have much to learn from analysis of this kind in the British Empire.

T. S. SIMEY

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Backwood's Utopias : The Sectarian and Owenite Phases of Communitarian Socialism in America : 1663–1829. By A. E. BESTOR. (Philadelphia : University of Pennyslvania Press (London : Geoffrey Cumberlege), 1950. Pp. 288. 28*s*.)

FRANCES TROLLOPE in her *Domestic Manners of the Americans* (1832)—she had gone out as the advance guard of her husband's Bazaar, " Trollope's Folly," as it came to be known in its Eden of Cincinnati—draws three unforgettable pictures : the lecture of her feminist friend, Miss Wright of Nashoba, a revivalist camp meeting in the forest by moonlight, and the debate at Cincinatti in the early summer of 1829 between " Mr. Owen of Lanark New Harmony and Texas " and the Rev. Mr. Campbell—

> " Never did any one practise the *suaviter in modo* with more powerful effect than Mr. Owen. The gentle tone of his voice; his mild, sometimes playful, but never ironical manner; the absence of every vehement or harsh expression; the affectionate interest expressed for " the whole human family "; the air of candour with which he expressed his wish to be convinced if he was wrong, if he indeed were so—his kind smile—the mild expression of his eyes—in

> short, his whole manner, disarmed zeal, and produced a degree of tolerance that those who did not hear him would hardly believe possible."

It is with this Owen that Professor Bestor is concerned and in particular with the five years which he spent in America from November 1824 to the summer of 1829, advocating "Communitarian socialism" and establishing the Community of New Harmony in Indiana on land which after a whirlwind tour of applauded lectures in the East he purchased from Father Rapp on January 3, 1825. Thus Harmonie of the Rappite became New Harmony of the Owenites—or Disharmony as it was jeeringly called ere long.

We on this side of the Atlantic find the Owenite literature sufficiently heavy, whether we are of the old school nurtured on the Foxwell Collection or the new generation that can consult the private papers in Holyoake House, Manchester. But when Owen is related to community history, the birth of the idea, the pre-Owenite and the rival communities in America and the five years of New Harmony itself, the literature on the American side alone is enormous; and that one scholar could master both fields, as our author with his elaborate documentation clearly has done, is a testimony to high scholarship.

There is, I fancy, no man about whom more biographies, or central chapters, have been or will be written: no man who is so woven into the fabric of social history as this leader and lawgiver of the New Industrialism; and it is because he was both that he is of more enduring importance than Fourier. Industrial Management, factory laws, consumer's co-operation, labour exchanges, mutuality, trade unionism, juvenile and adult education, religious toleration, the sociology of environment, the economics of town and country life: each of these great topics of world-wide interest draws on the Owenite fountain. What the American experience proves is that a great idea can survive defeat. He returned to England, his fortune mostly gone, only to be more powerful than ever—not that he kept his failure quiet, he went on to repeat it in England—to be in fact the spiritual core of the urge to voluntary economic association in a world tyrannised by individualist excess. For he preached at bottom neither revolution nor gradualism, neither Marx nor Fabian Society, but the peaceful timeless joys of brotherly love.

Professor Bestor throws the limelight on more figures than Owen himself—on William Maclure, his partner and critic, on his sons William and Robert Dale, on Frances Wright, an evangelist, also from the Old World. He has given us much, but one could wish from him this much more—a bold projection of the Owen of 1829 into the remaining years of an astonishing life. "The Fulfilment of Robert Owen."

C. R. FAY

Cambridge.

Quaker Social History : 1669–1738. By ARNOLD LLOYD. (London : Longmans, Green, 1950. Pp. xv. + 207. 21*s*.)

THE "people of God in scorn called Quakers" provide an excellent excuse for following the present fashion of writing history and calling it social history. One of the most considerable and vigorous of the sects of the seventeenth century, the Quakers declined in numbers, relative to the total population, until to-day the Society of Friends counts only one member in each 2,500 of the inhabitants of Great Britain. But in generation after generation this small body has produced men and ideas of importance in our national life; and on the whole these men and these ideas cannot rightly be interpreted without knowing something of the religious background from which they came.

The economic historian, in particular, cannot go far in the last three hundred years without coming across evidence of the Quaker influence. From the time of John Bellers, whose *Proposals for Raising a College of Industry* (1695) earned a well-deserved nod of approval from Karl Marx, the names of Quaker families crop up continually : Darby and Huntsman in iron and steel, Pease and Bradshaw in railways, John Bright and Joseph Sturge, Barclay, Lloyd, Gurney, Backhouse, Seebohm, Braithwaite, Bryant and May, Allen and Hanbury, Huntley and Palmer, Clark, Reckitt, Horniman, Christy, Fry, Tuke, Cadbury, Rowntree, Alexander, Gillett, Bevan and many more. But not very much is known about the social structure of Quakerism, especially in its early days.[1] Present-day Friends tend to believe, without much evidence, that their forefathers were rude and lived in hamlets—it is, indeed, a matter of faith that religious movements begin with the Common People. It is further believed that, by telling the truth and diligently refraining from putting sand in their sugar, Quaker tradesmen rose to positions of wealth and importance; and, becoming in a generation or two tired of trying to force their substantial camels through a needle's eye, they then left the Society of Friends and became pillars of the Church.

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[1] Some facts have since been presented in *Quakers in Science and Industry*, by Arthur Raistrick (Bannisdale Press, 1950), pp. 28–32, 40–1.

The latter sad declension is summed up in the saying: "A Carriage and Pair drives not long to a Meeting-House."

It is time that this mythology was put to the test of facts. Is it true that a high standard of rectitude leads to success in business? The charm does not seem to work so well in the twentieth century—the typical Friend of 1950 is a schoolteacher or a Civil Servant, somewhere in the middle reaches of salaried respectability, rather than a Marshallian entrepreneur. But the social position of his seventeenth-century forebears remains distinctly hazy. Part of the trouble (and this is what makes the subject so fascinating to the historian of local or national affairs) is the immense volume of original source material. The minutes of numerous business meetings, the registers of births, marriages and deaths, books of account, journals and biographies exist from the seventeenth century to the present day in remarkable variety and completeness. The great volumes of recorded Sufferings, noting for year after year in meticulous detail the distraints for tithes, would provide material for several theses.

It is therefore with some disappointment that we discover that Dr. Lloyd has not written a social history of early Quakerism at all. He was apparently inspired by the discovery of a late copy of a paper of advices by George Fox, dating from 1669, called "Friends' fellowship must be in the Spirit." The discovery was not in itself of importance, since numerous earlier copies are known, but Dr. Lloyd compared his document with a later volume of advice, the *Christian and Brotherly Advices* of 1738. (Hence the dates 1669–1738 in the title, though the book in fact ranges back to about 1650.) The contrast, like other contrasts between the seventeenth and eighteenth centuries, is considerable; by 1738 it was probably becoming unusual to refer to reverend gentlemen as "the priests of Baal, who are the rough hands of Esau and fists of wickedness, and bloody hands." But was Quakerism undergoing a social change, becoming middle-class and throwing off the roughness of its plebeian origin? Or did substantial shopkeepers and farmers of 1670 enjoy damning their opponents with unbridled language? Did the poor and the outcast flock to George Fox's sermons for entertainment (the Cup Final being then unknown), or as hangers-on of their richer neighbours—or were they really the main substance of early Quakerism? I do not know; and I doubt if Dr. Lloyd knows either.

In fact, Dr. Lloyd's book consists of a series of essays on matters such as the evolution of Church government, poor relief, Quaker marriage, the attitude to women, the printing of books and the keeping of accounts. Each by itself is of some interest, but the connection between them is less than can be justified even by compression within the unpromising framework of a thesis. The book reads as though one is starting it in the middle; and all the art of the publisher, expressed in pleasant type and good illustrations, fails to make it easy going. One has the impression, in fact, that the author never managed to digest the material he was using. At the few points where a general reader can check his statements, he tends to show those slight inaccuracies which, though individually unimportant, destroy one's faith in the veracity of the statements that one cannot easily check.

The standard histories of Quakerism, by William Charles Braithwaite and Rufus M. Jones, were written to convince as well as to describe. Both the economic and the general historian would be helped by a re-assessment of the formative years of the Quaker community. Dr. Lloyd has not yet succeeded in this task; but it is to be hoped that he, or another, will try again.

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Economics and the Public Welfare. Financial and Economic History of the United States, 1914–1946. By Benjamin M. Anderson. (London: Macmillan, 1949. Pp. 602 +xiv. 42*s*.)

The late Professor Benjamin Anderson was the economist of the Chase National Bank throughout the inter-war years, a position which put him in close touch with bankers and banking opinion and permitted him to observe monetary developments at close range. This book is his account and interpretation of the financial and economic history of the United States in the years 1914–46. Compiled largely from his own contemporary reports on financial affairs in the *Chase Economic Bulletin*, its text and footnotes liberally studded with " I-told-you-so "s, it is a highly personal book. Professor Anderson was an uncompromising economic liberal of the old school, thoroughly imbued with the principles of conservative banking, and he found much to disapprove of in the financial and economic events of which he wrote. It apparently never occurred to him that history is more than an opportunity for expressing approval or disapproval.

Many of his judgments on monetary events were shrewdly taken. He saw, for example, more clearly than many American economists of less sternly liberal persuasion the contribution to international difficulties made by the failure to reduce American tariffs after the First World War in line with the new creditor position of the United States; on the other hand, it is difficult to accept his statement that the Republican National Convention of 1920 realised the necessity for reducing tariffs and decided to reverse its tariff policy, but was frustrated by the stupidity of President Harding. He was not carried away in the latter twenties by the naïve faith of the Federal Reserve Board that it had found the way to control the American economy, though one cannot share his belief (p. 136) that:

> The Federal Reserve Act would have worked well had traditional central bank policies been followed, namely: the holding of the rediscount rates above the market rates, and the use of open market operations primarily as an instrumentality for tightening the money market, not for relaxing it."

He appreciated the obstructions to national and international recovery created by many of the New Deal measures in the thirties, obstructions which it has since become fashionable to understate. But again, his contention that the New Deal was responsible for the continuance of depression through the latter thirties is unconvincing. Finally, in 1945 he favoured a large outright gift to Britain in place of the American loan.

Others of his judgments, some of which have already been mentioned, can hardly be described as acute. Were British difficulties in the nineteen-twenties chiefly caused by adherence to a cheap-money policy? Is it true that England "made no fight at all" to stay on the gold standard in 1931? Did Federal Reserve policy, contrary to the findings of recent research, have nothing to do with the crisis of 1937, the blame falling almost exclusively on the trade unions? Finally, can the world depression of 1930–39 be completely attributed to "the efforts of the governments, and very especially of the Government of the United States, to play God" (p. 495)?

Whatever one thinks of Professor Anderson's judgment in particular cases, one cannot fail to be impressed by his grasp of the principles and practice of banking. One cannot say the same for his understanding of monetary theory. The "equilibrium theory," which derives from J. B. Clark and which forms the basis of his interpretations of monetary events, assumes a greater degree of economic flexibility and mobility than most economists would now consider realistic. The "Digression on Keynes," in which he attempts to refute that "dangerously unsound thinker," shows a good understanding of the meaning of Say's Law and a keen eye for inconsistencies in the exposition of the *General Theory*, but little conception of the construction and criticism of theoretical models. Wider reading of the post-Keynesian literature, with which the author professes himself unfamiliar, might have made this critique of the *General Theory* more effective.

In summary, this is a book by an orthodox banker, addressed chiefly to other bankers. The style itself is a banker's style, quoting excessively from the opinions and experiences of leading bankers, often unnamed. (" One fine veteran, a very upright man, faced this problem [the questionnaires required under the Banking Act of 1933], labored with it for several days and finally threw up his hands in despair. He died that night." (P. 337.)) It is interesting to have a record of New York banking opinion on the events of these important years, but need it have been embellished with this misleading title or the extravagant foreword by Mr. Henry Hazlitt ?

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The King's Highway. By REES JEFFREYS. (London: The Batchworth Press, 1949. Pp. xix + 292. 18*s*.)

MR. REES JEFFREYS describes his contribution on the title page as " an historical and autobiographical record of the developments of the past sixty years." Like many another autobiography, *The King's Highway* will interest first of all those who know the author and the many people mentioned in his pages. The road-user, interested in the provenance of the motorway and in the manner in which it has been created out of the country byways of the nineteenth century, will be rewarded by a wealth of detail and anecdote—and he may share the author's animosity against those who diverted the proceeds of motor taxation into the Exchequer ! The railway fancier, on the other hand, will find nothing here. The railways are joined with a parsimonious Treasury and the first chairman of the Road Board as agents of obstruction.

The principal economic and political argument is directed against the Treasury and against the system of central finance which concentrates all public revenues on the Exchequer and causes funds for public expenditure to issue from the Exchequer. Mr. Rees Jeffreys would like to see highway authorities assured of an adequate income and with the right to spend on highway projects up to the limit of that income. He makes the point that no major roads were built from the time of Telford till the outbreak of the First World War; and that construction between the wars was undertaken in relief of unemployment and not primarily to satisfy the needs of traffic nor the demands of a coherent transport policy. The student of government will remark (possibly without regret) upon the inability and unwillingness of the Road Board to use its ear-marked revenues, the proceeds of motor taxation, as a means of establishing its independence. The economist will note one unfortunate consequence of the subordination of road construction to unemployment relief—the primitive methods of construction usual in this country, undertaken without any of the earth-moving equipment in common use across the Atlantic, and deliberately wasteful of labour. But few economists to-day would agree even with the principle of an authority or authorities competent to construct highways and financially independent of the Treasury. The value of the investment controlled by such an authority puts it among the first of the instruments recommended to any government determined to plan for stability of income and employment. Mr. Rees Jeffreys makes much of the failure of the Road Board (of 1910) to embark on any worthwhile projects of new construction or to incur any heavy expenditure on the security of its revenues, the yield of motor taxation. To this criticism he returns again and again. But only once does he mention, and then almost by the way, that for the last half of the Board's existence, from 1914 to 1918, the country was heavily engaged in the First World War! To those of us who have so recently lived through the Second World War, it would have been surprising, and evidence of a wholly unjustifiable waste of national resources, if the Road Board had indeed been permitted to spend its funds on the purposes for which they had been ear-marked in 1910.

Mr. Jeffreys contributes a most useful chapter on the origins, history and work of the Road Board set up in 1910. But he has disappointingly little to say on the question of road finance, and what he does say is hardly new at this late date. The costs of highways, he declares, should be shared between landowners and motor users and between different classes of each, and the shares should be not only definite but also just and equitable. Possibly—but nothing is said to clear up the many confused and contradictory ideas entertained by the several classes about the size and equity of the share which each should contribute. Mr. Jeffreys finally takes comfort in the fact that, with transport nationalised, road interests, through the Road Executives of the British Transport Commission, will have "an effective voice inside the counsels of government in favour of a fair outlay upon the King's Highway." He has surely allowed his enthusiasms to run away with his political sagacity, his understanding of the organisation of the British Government and the teachings of his own official experience of thirty-five years ago!

The impression left upon the reviewer by this extremely detailed and often dogmatic record is that of a single-minded and dedicated man. The chronicle (it can hardly be described as a book, if anything more is meant by that term than a collection of chapters upon the same wide subject) picks out first one and then another of a host of topics all in some way connected with the policy (or lack of policy as the author would have it) manifest in the development of the British road system from the earliest days of motoring down to the present. Narrative and argument jump from one subject to another without much obvious continuity, and the style is not improved, nor assimilation assisted, by the author's habit of numbering his points and changing the type face. The volume is well got out, lavishly illustrated and provided with a comprehensive index. But the reviewer notes with regret a certain carelessness once the author strays from his chosen subject. Government could no doubt (p. 194) take steps to encourage the training of highway engineers; but which British University would consent to Government *prescribing* a curriculum for the training of these young men?

GILBERT WALKER

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British Broadcasting: A Study in Monopoly. By R. H. COASE. (London: Longmans, Green and the London School of Economics, 1950. Pp. viii + 206. 12*s.* 6*d.*)

How came British broadcasting to be a State monopoly? Having become one, what effects on other broadcasting—*e.g.*, by wire, or by sponsored advertising—followed? What is the public, private and corporate opinion on British monopoly broadcasting? These questions, not really tackled by any book since the beginning of British broadcasting, have been objectively examined and comprehensively answered by Mr. R. H. Coase in a monograph which, well in advance of the Beveridge Committee's report on the renewal of the B.B.C.'s Charter after December 31, 1951, promises to become the *locus classicus* on the matter for some time.

The author disclaims any desire to judge the desirability of monopolistic broadcasting in Britain. But like Adam Smith's entrepreneur he achieves "an end which was not part of his intention"; for his careful accumulation of all public and private evidence, and his strict analyses of charters, blue books and white papers, lead him to a final "commentary" which reads much like a judicial summing-up; and it is not one calculated to let monopoly go scot-free at the hands of the juryman-reader. His last words are:

> ". . . this support for the monopoly also reflects the spirit of the age. According to our temperament, we welcome or acquiesce in the extension of central planning, even, it would appear, when it relates to a source of news and opinion. A monopoly is still regarded with disquiet; but only if it is a private monopoly. A monopoly held by a public authority, as in the case of British broadcasting, is considered to be free from the vices of private monopolies and to possess virtues of its own."

There will be a wide divergence of opinions whether this view of public monopolies, widely held a few years ago, is now valid. in the light of our recent and fuller experiences of other State monopoly-services, from the Coal Board to aviation corporations and from groundnuts to gasworks. The trade-union movement, Fabian Society and political Labour Party are undergoing severe soul-searching on this point. Even if they all keep it secret and nothing results from it, the climate of opinion is changing.

It seems a pity, therefore, that the author confined his timely, valuable and exhaustive study to the external aspects of our broadcasting monopoly—to its development and its "public relations" in the best and widest sense of that term—and did not look at its ecology, methodology and manner of operation as an organism. To take one example: Mr. Coase eschews television; yet in the B.B.C.'s current attitudes to television (especially to its natural claim for separate and singular treatment as a service) are being repeated almost every fallacy which Mr. Coase traces in the development of aural radio. To take another instance: nowhere does the author broach one of the gravest problems both of the B.B.C. and of all other monolithic, overcentralised monopolies, private or public: namely, the rapid and inordinate growth of the incubus known as "staff overhead." The incidence of this "overhead" of administrative personnel and bureaucratic hierarchy, known to the *cognoscenti* of monopolies from Moscow to Michigan as "admin. apoplexy," has become perhaps the B.B.C.'s biggest and most intractable problem. The Corporation's non-engineering personnel engaged on our domestic service alone has been virtually doubled in fifteen years, but the services to listeners- and lookers-in have not. At the outset or in mid-career, Mr., or Sir John, Reith, the only consistent, individual proponent of monopoly broadcasting, could run " his " monopoly (with its 2,500 employees all told) as Calvin ran Geneva, for the citizens' good as he saw it. It is gravely to be doubted if Sir William Haley or anyone else, inheriting a monopoly composed of world-wide and home services and employing 12,000 persons, could ever compass the altered task on the same Reithian lines. Yet the postponing or procrastinating extensions of the Charter have condemned the " admin." of the Corporation to swell, out of all proportion to its services, while old aims and methods of " admin." were sedulously followed, devolution was frowned on, and the monolith preserved. Upon all this, now the central problem of British broadcasting and all other British monopoly services alike, we must await the Beveridge and other reports. Yet it would have rendered Mr. Coase's study invaluable if he had included the inordinate development of this administrative problem in his analysis; for it is the Old Man of the Sea upon the B.B.C.'s shoulders and much of the travail of the monopoly is due to it.

Valuable, however, his book assuredly is. In this most influential, forward-looking and still largely unpredictable sector of our public life, there have not been more than half a dozen books in England in thirty years to which the serious student of broadcasting could go for enlightenment. Now he will get as much as can be known of the ways in which the listening-set makers, the Press (shortsightedly !), the P.M.G.s of successive governments—by accident of an old statute—and the (then) Mr. Reith all lined up to " lobby " for a State monopoly. He will learn of the fears of the organised Press that it would lose advertising if sponsored advertising were allowed over the air. He will see why innovation, new processes and new ideas of servants of the monopoly are so hard to try out; and why fear and timidity and " playing safe " are the orders of the day. He will enjoy Mr. Coase's own analytical enjoyment as the latter coolly demonstrates that a " good " monopoly, or " the best in the world," can still be made better; that the worst of American methods is not the alternative; that competitive broadcasting *can* be technically arranged; and that—as economists (but few others seem to) know from both Russian and American precedents in " big business "—monopoly needs an efficiency-audit, of which competition between independent and devolved units is probably the best, and certainly the fairest and least arbitrary. He will also get a penetrating analysis of the politico–ethico–cultural dilemma into which successive governments have pushed the government of the day: in which a Party Cabinet has to preserve the semblance of impartiality on all broadcasting of talks and features, yet cannot give the B.B.C. a really free rein.

The student and the informed layman should be grateful to the author (and the School of Economics) for providing, in time for a critical public decision about British broadcasting, so informative and impartial yet so interestingly written an analysis of a familiar but secretive and strangely unknown British institution; one which has "just growed"; but one which, by common consent, cannot go on as it has gone on for its first generation of life.

GRAHAM HUTTON

London.

NOTES AND MEMORANDA

MEASUREMENT OF INDUSTRIAL EFFICIENCY

THE question is often asked whether efficiency of an industrial unit can be quantitatively measured, and if so, what should be the standard of measurement which can be applied with reasonable accuracy? While it may be generally agreed that the absolute measurement of efficiency is neither feasible nor practicable, the relative efficiency of different units can be measured with reasonable accuracy. The word "efficiency," as it is commonly understood, is a relative term, and we characterise a particular unit "efficient" or "inefficient" not absolutely but in relation to some other units. It, therefore, pre-supposes some existing standards of valuation. Viewed in that perspective, we believe such efficiency can be quantitatively measured, if not with scientific exactitude, at least with reasonable accuracy.

STANDARD OF MEASUREMENT

The serious difficulty, therefore, arises mainly in the choice of selecting some suitable standards. The suitability of any unit of measurement will depend much upon the significance we attach to the word "efficiency." If industrial efficiency consists, as Mr. E. A. G. Robinson has viewed it, "in trying to do with eight men what we have hitherto been doing with ten men," labour productivity per worker, or to put in a more scientific term "labour productivity per man hour (P.M.H.)," may be regarded as a satisfactory criterion for measuring industrial efficiency. If, however, the term "efficiency" is used in a more comprehensive sense, meaning a "measure of securing the greatest results at least cost," "Cost of Production per Unit of Output" can be regarded as a most satisfactory and reliable standard of efficiency. An industrialist will, however, view "efficiency" from some different perspective. His aim is to produce goods with as much profit as can be obtained in the prevalent circumstances, and from that standpoint his success will be judged by his "earning capacity." Rate of profit can, therefore, also be one of the standards of measuring "efficiency." If, however, the word "efficiency" is to be used in its widest sense, it will connote a higher standard of living for the worker, lower prices for the consumers and greater returns to investors. But since in practice these objects are often in conflict with each other, we cannot think of one common standard of efficiency which can be applicable to all. This limitation prevents the use of " efficiency " in its widest sense.

Thus we see that the standards of measuring efficiency will vary according to the purpose in view. It is also significant to observe that none of the several methods by which " efficiency " can be measured is in itself entirely adequate. If all these criteria are used there is every possibility that the distortions, attributable to any one criterion taken singly, can be easily off-set. Moreover, if the application of all of these standards reveals the dominance of the same tendencies, the general conclusions can be further verified and confirmed.

We can, therefore, use the following standards of measurement for comparing the industrial efficiency of different units :

(i) " Earning " or " Profit-making " capacity of different units;

(ii) Labour Productivity Per-Man-Hour (P.M.H.), and

(iii) Cost of Production per Unit of Output. The lower the cost, the greater is the industrial efficiency.

RATE OF PROFIT AS AN INDEX OF EFFICIENCY

It is significant to inquire how far the rate of profit is truly indicative of the efficiency of the industry. While, no doubt, gains or losses are the chief criteria by which we judge the success or failure of an enterprise they can by no means be regarded as the sole or even the most important determinant of the efficiency of the industry. Profits are the results of a variety of factors, and since efficiency is only one of them, it will not be wholly correct to establish any correlation between rate of profits earned and the standards of efficiency attained by different units. The rate of profit as an index of the efficiency will, therefore, have to be judged in the light of several qualifications and reservations. First, the rate of profit may vary, even in the same centre, from unit to unit according to the differences in their capital-structure, particularly the relationship between the " owned " and " borrowed " capital; secondly, the rate of profit may vary as a result of the variations in the amount of capital invested; and thirdly, the variations in the rate of profit may be caused by the operation of cyclical influences. All these factors tend to show that the causes, other than efficiency, may also explain and account for the variations of profit-rates. Hence the rate of profit, as an index of efficiency, has its own limitations.

LABOUR PRODUCTIVITY AS AN INDEX OF EFFICIENCY

While no doubt, theoretically, " labour productivity per-man-hour (P.M.H.) " is a fairly satisfactory method for measuring the relative efficiency of different units, in practice a number of important limitations render its general application exceedingly difficult. For certain obvious reasons, it is difficult to measure, with mathematical exactitude or scientific accuracy, the labour productivity per man-hour. Even if such computations were possible, it may still be questioned whether the statistical data of different units are truly homogeneous for inter-comparison. The type of goods produced by different units shows wide variations in respect of dimensions, texture, design, finish and quality. The result is that the differences in " productivity " as measured by physical volume of output may only reflect differences in the character of goods produced by different units. Again, the equipment of mills shows such a vast range of variations both in the character of the machinery employed and in capacity and actual output that it is difficult to find any satisfactory basis for evaluating the relative efficiency of different units. Moreover, for any comparison, we shall have to start on the postulation that the conditions of work in different units do not show significant variations, that the units under comparison derive the same benefit in respect of location and that the hours of work and the composition of labour force are the same in all the units. All these assumptions are, of course, too far-reaching in character, and the generalisations based on them may even be regarded as untenable.

COST OF PRODUCTION

The most reliable and dependable measure for comparing the efficiency of different units is the cost of production per unit of output. The lower the cost per unit of output, the greater is the efficiency attained by the industrial unit. Costs in a competitive economy can therefore be characterised as a " barometer " by which we can measure and compare the relative efficiency of different units.

It need hardly be emphasised that the difficulties of obtaining and verifying costs of different units are infinitely great. Costs are always regarded as a " trade secret " to which an outsider can hardly have any access. Even the Tariff Boards, in spite of their written undertakings that neither the identity of the mills nor the cost statements supplied by them would be disclosed in their published reports, were unable to obtain all the information they needed. Not only are mill-owners extremely reluctant to disclose any information, they have also, in many instances, ingeniously concealed or manipulated the available information in their published Balance Sheets and Annual Statements. It must, therefore, be admitted that the paucity of statistical information and the extreme variability and complexity of statistical data may prevent a very thorough and searching analysis of the relative efficiency of different units.

Another difficulty arises with regard to the inter-comparison of the costing data. The units are situated in different industrial centres and derive differential advantages in respect of locational economies. The distance of mills from the centres of raw materials and from the sources of power, the varying rates of wages and conditions of labour in different parts of the country, the marked divergences as regards the character and accessibility of the principal markets and other differences arising from the local environment of the industry are so great that the costing data available for comparison will not be truly homogeneous. Even if we confine our inquiry to industrial units situated in the same centre or area and deriving the same benefits in respect of location, there will still remain significant differences in the character of technical equipment and type of goods manufactured. These differences are so considerable and variable that the question is frequently asked whether in the absence of the uniform conditions prevailing in the industry, does any satisfactory basis exist for the inter-comparison of the costing data? The cumulative effect of these limitations may be so considerable as materially to influence the validity of the main generalisations.

Still another difficulty of a strikingly similar character arises while examining the cost-structure of different units. The question whether for comparative purposes, costs should be expressed as "per unit of output" or as "percentage of the Value of Goods produced" is difficult to answer without examining the nature of the industry and the character of industrial output. In industries like cement or coal, where the output data can be reduced to homogeneity, the costs per unit of output can form a satisfactory basis for measuring and comparing the relative efficiency of different units. But where there exists important qualitative differences in the character of output, such as variation in shape, quality or design, "cost of production per unit of output" will fail to throw any light on the comparative cost-structure of different units. For example, in the cotton-mill industry, a unit operating on yarn of less than twenty counts and producing cloth of coarse varieties, capable of standardised production, will necessarily have lower cost of production per unit of output than an industrial unit operating on finer counts of yarn and producing goods of light, fine and fanciful varieties. In such cases cost of production per unit of output will vary with the variations in the character of output. Hence the method of expressing costs as "per unit of output" cannot provide a satisfactory basis for cost-comparison unless comparisons are confined to particular counts of yarn or selected varieties of cloth. The only method, therefore, that can be applied for comparing the cost of production of different units is by expressing costs as "percentage of the value of goods produced" or as "percentage of total turnover."

In such cases the cost of component items like raw materials, wages, stores, fuel and power, repairs, etc., would be expressed either as "percentage of the Value of Goods Produced" or as "percentage of Total Turnover." The expression of component costs as percentage of total costs or turnover would furnish some basis for inter-comparison, and render the measurement and inter-comparison of industrial efficiency of different units possible.

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A Further Statistical Note on the Distribution of Individual Output

In an article on "The Distribution of Earnings and of Individual Output" (Economic Journal, September 1950) an attempt was made to test statistically the hypotheses that certain sample distributions of individuals' output per hour had been obtained from populations in which such output had a normal or a log-normal distribution. Unfortunately the tests used were in many instances inconclusive, and the whole question had to be left open. In this note a brief account is given of an alternative method of procedure which yields more definite results. The results of the application of this method to the data, considered in the article mentioned above, will be discussed.

Suppose that we have a sample of the different outputs, in a given period, of n individuals. Suppose, too, that we consider a particular normal or log-normal distribution with given mean value and dispersion. What is the probability that the sample was drawn at random from this particular distribution? Since we are dealing with a continuous distribution, such a question is meaningless, as there exist an indefinitely large number of equally likely samples of size *n*, of which our particular sample is only one. We can, however, consider the " probability density " or " likelihood " in the neighbourhood of the sample, that is to say we can obtain a measure of the probability not of a particular sample but of a whole set of samples that lie in an interval of a certain size containing the particular sample. The measure in question is then the product of the " probability density " and the dimensions of the interval specified. Thus on a given hypothesis as to the parent distribution, every sample is associated with a " likelihood," which is the analogue for a continuous distribution of the probability of obtaining a particular sample in drawing from a discrete distribution.

If there are two hypotheses as to the distribution from which a certain sample was drawn, the likelihoods associated with the sample on the two hypotheses can be compared. The hypothesis for which the likelihood is greater is then the more probable of the two.

The problem with which we are concerned is not, however, to test whether a particular sample of outputs is more likely to have been obtained from a normal distribution of given mean and dispersion or from a log-normal distribution also with given mean and dispersion, but is much more general, namely to test whether a sample is more likely to have come from any normal distribution whatsoever or from any log-normal distribution. The seemingly more general problem can be turned into the simpler one if we agree to give each of the two hypotheses of the general case the best possible chance. Thus we select that particular normal distribution for which the likelihood of the sample is greatest and that particular log-normal distribution for which the likelihood is also greatest. The greatest possible likelihood of the sample on a " normal " hypothesis is then compared with the greatest possible likelihood of the sample on a " log-normal " hypothesis, and as a result of this comparison one or other hypothesis is adjudged more probable.

This procedure was carried out for the samples discussed in the earlier article. A very simple expression was obtained for the ratio of the maximum likelihood of each sample on the normal hypothesis to the maximum likelihood on the log-normal hypothesis, and this expression was then evaluated for each sample.[1] When this ratio is greater than unity, the normal hypothesis is more probable than the log-normal hypothesis; if it is less than unity, the log-normal is more probable. Table I shows the result of these calculations for samples A, B, C, D. E (Male), E (female), F and I, *i.e.*, those samples for which the variation of output per hour (or of log output per hour) with age were not removed.

TABLE I

Letter.	Sample description.	Size of sample.	Maximum likelihood ratio (normal/log-normal).	More probable hypothesis.
A	Chocolate packing	35	0·429	Log-normal
B	Chocolate packing	66	1·084	Normal
C	Cigarette packing	11	0·917	Log-normal
D	Cigarette packing	20	3·565	Normal
E (male)	Spring manufacture	21	1·418	Normal
E (female)	Spring manufacture	24	0·427	Log-normal
F	Bank wiring	73	0·458	Log-normal
I	Record pressing	25	0·718	Log-normal

For the remaining samples the procedure was similar, but some assumption had to be made about the distribution of age in the working population. For reasons of simplicity and because of the extreme difficulty of dealing statistically with any other assumption, this distribution was assumed to be approximately normal at least over the range of ages with which we were concerned.[2]

Table II shows the maximum likelihood ratios for the remaining samples, G, H, J and K, from which variation in output or log output per hour associated with age has been removed.

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[1] If the sample consists of n values of output per hour $x_1, x_2, \ldots, x_n$, the ratio of the maximum likelihoods can be shown to equal

$$\left(\frac{\sum_1^n (\log_e x_i - \frac{1}{n}\sum_1^n \log_e x_i)^2}{\sum_1^n (x_i - \frac{1}{n}\sum x_i)^2}\right)^{\frac{n}{2}} \prod_1^n x_i$$

[2] On this somewhat dubious further assumption, the ratio of the maximum likelihoods equals:

$$\left(\frac{(1-r'^2)}{(1-r^2)} \cdot \frac{\sum_1^n (\log_e x_i - \frac{1}{n}\sum_1^n \log_e x_i)^2}{\sum_1^n (x_i - \frac{1}{n}\sum_1^n x_i)^2}\right)^{\frac{n}{2}} \prod_1^n x_i$$

where r is the correlation between output per hour and age and r' is the correlation between log output per hour and age.

TABLE II

Letter.	Sample description.	Size of sample.	Maximum likelihood ratio (normal/log-normal).	More probable hypothesis.
G	Top stitching	12	2·360	Normal
H	Armature winding	9	1·115	Normal
J	Packing of goods	25	0·335	Log-normal
K	Psychological laboratory test	107	0·030	Log-normal

This, however, is not the end of the matter, for we can compare the probability of the two hypotheses using all the evidence, which we have obtained, simultaneously or indeed any part of the evidence that we fancy. To do this, the maximum likelihood ratios of all the samples, or of any selection of them, are multiplied together. We are then comparing the likelihoods that the samples concerned were all drawn from either normal or log-normal distributions, the mean values and dispersions of which being chosen so as to make the likelihood of each sample as large as possible.

Considering all the samples given in Table I, the maximum likelihood ratio is equal to 0·501, so that on the evidence of that table the odds are 2 to 1 in favour of the hypothesis of log normality. Similarly for Table II, the ratio is 0·026, and thus the odds are about 40 to 1 in favour of log normality. If we consider all the industrial samples together but prefer to omit sample K, because of the different conditions under which it was obtained, the ratio becomes 0·442, *i.e.*, odds of 9 to 4 on log normality. Finally, if all the samples are considered, the maximum likelihood ratio is 0·013 and the odds are just under 80 to 1 on log normality.

The test used is thus much more conclusive than those used in the original article, but it is more limited in one respect, namely that it does not allow a hypothesis to be rejected outright but merely expresses its probability relative to that of another hypothesis.

If we are prepared to believe that the hypotheses we have considered are not just two out of a large number of possible hypotheses but are in fact the only possible hypotheses, we can refine the testing procedure still further. It is now proper to consider the possibility that the test will lead us to consider one of the hypotheses to be more probable, when in fact the other hypothesis is true. If we are particularly sensitive about the making of such mistakes, the test must be modified so that we have option of postponing judgment if the risk of error is unduly great. We therefore require a test such that, if the maximum likelihood ratio is greater than or equal to A, say, we accept the hypothesis of normality while if it is less than or equal to B we accept the hypothesis of log-normality. If the ratio lies between A and B we make no decision, and thus avoid an undue risk of error.

Suppose we wish to be sure that we choose the wrong hypothesis in only $100\alpha\%$ of cases, where α is a number between 0 and 0·5. If the likelihood ratio is greater than or equal to A, say for a particular sample, the chance that this sample came from a normal distribution is at least A times the chance that it was obtained from a log-normal distribution. Thus the chance that all possible samples, for which the ratio is greater than or equal to A, came from a normal distribution is also at least A times the chance that they were all obtained from a log-normal distribution. But the test is to be designed so that it is right at least $100\ (1-\alpha)\%$ of cases and wrong in no more than $100\alpha\%$ of cases; thus, for a given α, A must be not greater than $\frac{1-\alpha}{\alpha}$. By analogous reasoning it may be shown that B is greater than or equal to $\frac{\alpha}{1-\alpha}$.[1]

It can be shown that in practice it is reasonable to take $A = \frac{1-\alpha}{\alpha}$, $B = \frac{\alpha}{1-\alpha}$, and that these values provide at least the same protection against wrong decisions as would the more precise calculation of the values of A and B.[2]

Using the ratios of the maximum likelihoods, which we have calculated for each sample, we can find approximately the chance that the ratio has decided in favour of the wrong hypothesis. Or, to put it another way, we can find the lowest value of α, which we should have to choose in order to arrive at a decision in each case instead of witholding judgment. The values are given in Table III.

If we consider all the evidence, *i.e.*, samples A to K, the result is reasonably impressive, but is the assumption that the hypotheses of normality and of log-normality are the only possible ones at all tenable? If we agree that the output per hour of an individual

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[1] See Abraham Wald, *Sequential Analysis*, p. 41. It is possible that we might be more sensitive about making a mistake in respect of normality than in respect of log-normality or vice versa. This situation can be satisfactorily met, but will not be considered here.

[2] See Abraham Wald, *Sequential Analysis*, pp. 44–8.

TABLE III

Sample(s).	Maximum likelihood ratio (normal/log-normal).	More probable hypothesis.	Chance of being[1] wrong is less than or equal to :
A	0·429	Log-normal	30 times in a 100
B	1·084	Normal	48 ,, ,,
C	0·917	Log-normal	48 ,, ,,
D	3·565	Normal	22 ,, ,,
E (male)	1·418	Normal	41 ,, ,,
E (female)	0·427	Log-normal	30 ,, ,,
F	0·458	Log-normal	31 ,, ,,
G	2·360	Normal	30 ,, ,,
H	1·115	Normal	47 ,, ,,
I	0·718	Log-normal	42 ,, ,,
J	0·335	Log-normal	25 ,, ,,
K	0·030	Log-normal	3 ,, ,,
A–J	0·442	Log-normal	31 ,, ,,
A–K	0·013	Log-normal	1 ,, ,,

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[1] Chance of being wrong approximately equals $\frac{1}{1 + R}$, when R is greater than 1, or $\frac{R}{1 + R}$, when R is less than 1 ; where R is the ratio of maximum likelihoods.

depends on a large number of random influences and that as a first approximation these influences act independently, then the only question that needs to be decided is how these influences combine. Do they act together additively, multiplicatively or in some other way ? Is there indeed any plausible method of combination that is not either multiplicative or additive ? At least multiplication and addition appear to be equally simple operations. Is it not then reasonable to assume that they are the only possible alternatives ? If this is so, we are at once led to a normal distribution or to a log-normal distribution and, provided that the assumption of random selection of all the samples is justified, we can state conclusively that the evidence is overwhelmingly in favour of the hypothesis of a log-normal distribution and that the chance that we have been misled is only 1 in 100.

A. D. ROY

Cambridge.

Unrequited Imports and the Terms of Trade: A Note

In a recent article in this Journal,[1] Professor Pigou has argued that the receipt of unrequited imports by one country from another may generally be expected to turn the terms of trade in its favour. In order to establish this conclusion, Professor Pigou first derives the mathematical condition for the country's terms of trade to improve, and expresses it in terms of the elasticities of each country's desires for its own and the other's product and the proportions of their exports to their total production. He then argues that, on the basis of reasonable assumptions about the magnitudes of the relevant elasticities and fractions, the required condition is likely to be met, so that the terms of trade are likely to turn in favour of the receiving country.

The mathematical argument by which Professor Pigou establishes his final formula [2] is rather confusing: not only are there a number of obvious slips in the presentation, but also the steps in the derivation do not seem to follow logically one from another. For the convenience of readers who might otherwise be obliged to spend a considerable amount of time in attempting to verify the formula for themselves, an independent and, it is hoped, more readily comprehensible derivation of it is presented below. The symbols employed are identical with those in the original article, and their definitions will not be repeated here.

Write p for the price of home goods in B in terms of foreign goods, in the initial situation. This price must be equal to the ratio of the marginal desire for linen to the marginal desire for cloth in both countries. Consequently, in the initial situation

$$\frac{f}{\phi} = p = \frac{\psi}{F}^{3} \quad . \quad . \quad . \quad . \quad . \quad . \quad (1)$$

In the later situation

$$\frac{f(y-h)}{\phi(A-x-r+k)} = (p+\Delta p) = \frac{\psi(B-y+h)}{F(x+r-k)} \quad . \quad (2)$$

Substituting for p and using the first two terms of Taylor expansions as approximations to the values of the functions in the later situation,

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[1] A. C. Pigou, "Unrequited Imports," *Economic Journal*, June 1950, pp. 241–54, especially pp. 247–9.

[2] *Ibid*, p. 248, lines 1–12.

[3] In writing this equation as $\frac{\phi}{f} = p = \frac{\psi}{F}$, and equation (2) analogously, Professor Pigou has evidently forgotten that the Greek letters symbolize the marginal desire of each country for its own goods; since they refer to different commodities, they cannot both appear as numerators in the equations.

$$\Delta p = \frac{f - hf'}{\phi - (r - k)\phi'} - \frac{f}{\phi} = \frac{f}{\phi - (r - k)\phi'}\left[(r - k)\frac{\phi'}{\phi} - h\frac{f'}{f}\right] \quad (3)$$

Substituting for $(r - k)$ from Professor Pigou's equation (III)[1]

$$\Delta p = \frac{hf}{[\phi - (r - k)\phi']}\left[\frac{\frac{\phi'}{\phi}\left(\frac{\psi'}{\psi} + \frac{f'}{f}\right)}{\frac{\phi'}{\phi} + \frac{F'}{F}} - \frac{f'}{f}\right]$$

$$= \frac{hf}{[\phi - (r - k)\phi']\left[\frac{\phi'}{\phi} + \frac{F'}{F}\right]}\left[\frac{\phi'\psi'}{\phi\psi} - \frac{f'F'}{fF}\right] \quad . \quad . \quad (4)$$

Since h, $(r - k)$, f, ϕ, F and ψ are positive, and f', ϕ', F' and ψ' are negative, Δp will be positive if

$$\frac{\phi'\psi'}{\phi\psi} < \frac{f'F'}{fF}$$

or, remembering (1), if

$$\frac{\phi'\psi'}{f'F'} < 1 \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (5)$$

The same result follows from development of the other side of equations (1) and (2). This result is identical with Professor Pigou's,[2] and gives the same formula when translated into elasticities, *i.e.*

$$\frac{xy}{(A - x)(B - y)} \cdot \frac{\eta_a}{E_a} \cdot \frac{\eta_b}{E_b} < 1 \quad . \quad . \quad . \quad . \quad (6)$$

In conclusion, it may be useful to remark that the translation of the formula into elasticities, and the subsequent arguments that "no country normally exports more than a fairly small fraction of its aggregate output," and that "in the absence of special knowledge, it is reasonable to suppose that the elasticity of a country's desire for the goods that it makes itself will not differ much from the corresponding elasticity in respect of those that it imports"[3] are an unnecessarily cumbersome (and possibly suspect) way of establishing the conclusion that the terms of trade will tend to move in favour of the country receiving unrequited imports. The conclusion can be established more simply and directly from the inequality (5) above. The inequality will be fulfilled if the marginal desire for home-produced goods diminishes less rapidly than the marginal desire for foreign goods in each country; this seems a simpler and more defensible assumption to make than Professor Pigou's.

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[1] A. C. Pigou, "Unrequited Imports," *Economic Journal*, June 1950, p. 244.

[2] *Ibid.*, p. 248, line 8.

[3] *Ibid.*, p. 248.

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Professor Pigou writes as follows: "Forgetful of former *bêtises*, I neglected to get the algebra in my article vetted before publication. The above note refers to the last section of that article. Mr. Carter is an expert mathematician; I have no doubt that the workings in the note are correct and that mine contain slips and errors, for which I apologise. I think I know how this came about, while, nevertheless, the formula which I derived is right. But that is of no interest to anybody except myself."

RISK AND THE COBWEB THEOREM

IN the article, "Risk and the Cobweb Theorem," by F. G. Hooton, in the March 1950 issue of the ECONOMIC JOURNAL, there appears a slight error on page 75.

Fig. 3 on that page is indicated to have both supply and demand curves of the same elasticity. Ignoring the fact that this is an almost indefinable state of affairs unless both curves are considered to have their elasticities constant, the two curves shown most definitely do not have similar elasticities. Rather, they are mirror images of one another, reflected about their point of intersection. The ONLY place at which the elasticities can be considered identical is this point of intersection.

What is identical for both curves is their slopes at any given price or output. For any given price, the outputs differ for the two curves; obviously the elasticities cannot be the same, since the elasticity equals

$$\frac{dQ}{dp} \cdot \frac{p}{Q}.$$

In the original article by Ezekiel[1] the diagram is explained thus: ". . . the demand curve is the exact reverse of the supply curve, so that at their overlap each has the same elasticity."

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[1] "The Cobweb Theorem," M. Ezekiel, *Quarterly Journal of Economics*, February 1938, reprinted in *Readings in Business Cycle Theory*, Blakiston. Above reference to page 429 (*Readings*).

OBITUARY

E. G. DOWDELL 1902–1950

THE following note is reproduced from the *Oxford Magazine* by the kind permission of the editor :

Dr. Eric G. Dowdell's death at the age of forty-seven removes from St. John's and Oxford a teacher of economics whose mind was singularly acute and incisive. Though blind from infancy and hampered by poor physique, his dogged determination and integrity of character enabled him to make valuable contributions to his generation and until latterly to live a life of remarkable zest. Keenly interested in music, he was himself a competent pianist. He was fond of long country walks and of listening to the calls of wild birds, many of which he could identify by their song. He had a nice sense of words and at times a piquant wit, yet there was the grace of humility about him that sprang from a real Christian piety void of any trace of cant and sentimentality. He never complained of his lot, and took a lively interest in the doings of people. He could talk cricket as well as politics, and enjoyed a good gossip and a game of bridge or chess.

Educated at the Royal Normal College for the Blind, he came up in 1921 as a commoner to St. John's College and took First Classes in Modern History (with the Age of Dante as his special subject) and in Philosophy, Politics and Economics. He was awarded by the University in turn the Junior and Senior George Webb Medley Scholarships in Economics and a Casberd Scholarship by the College. In due time he proceeded to the degree of Doctor of Philosophy with a thesis on the administration of the Middlesex Justices in the century after the Restoration, a work subsequently published with a preface by Sir William Holdsworth. For the past twenty-three years he proved himself a conscientious tutor, particularly appreciated by the abler of his pupils. Though courteous and friendly, he could be a severe critic of slipshod and careless work. If he lacked, as was inevitable, a touch of the picturesque and the colourful, the study of Economics and Economic History provided excellent material for the sharp, analytic quality of his mind.

He took a great interest in many societies for the welfare and education of the blind. He was chairman of the Oxford Society for the Blind, and one of the most active governors of his old school as well as of the Worcester College for the Blind. He was also a member of the Council of the National Institute and President of the National Federation of the Blind. His life is a remarkable example of the way in which the human soul can rise triumphant over the most serious limitations imposed by nature.

W. C. COSTIN

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READERS of the *Economic Journal* will recall Dr. Dowdell's article on "Concerted Regulation of Price and Output" (June 1948).

He was a familiar figure at gatherings of economists at Oxford. His contributions to the discussion were terse and relevant; often he reminded us of some classical doctrine that bore upon our subject; often, too, he surprised us by his knowledge of recent periodical literature or recent events. He kept abreast. There was a certain detachment in his comments, and a gravity. Occasionally he seemed to be restraining us from running too far afield in pursuit of some modern hare, almost as though *in loco professoris*. But he was very friendly and very modest. He dated from a time, not far distant, when the economists in Oxford were few in number, so that he was very much at home, easy and natural. He had partaken in the struggle to establish economics here; that gave him an assured position of right. I never heard a word of malice or acerbity on his lips; he seemed to be a pure spirit, a student labouring under a handicap of which he did not complain.

R. F. H.

CURRENT TOPICS

MR. M. J. OAKESHOTT, Fellow of Nuffield College, Oxford, has been elected to the Professorship of Political Science at the London School of Economics and Political Science vacant through the death of Professor H. J. Laski.

PROFESSOR G. FINDLAY SHIRRAS has been invited to serve as Professor of Political Economy in Dublin University for one year during the leave of absence of Professor G. A. Duncan, who has been awarded a Leverhulme Research Fellowship and granted leave of absence.

THE newly created International Economic Association was brought formally into existence by a Meeting of the Council held at Monaco during September. The draft Statutes of the Association were considered, amended and approved. The Council discussed the future lines of activity of the Association and gave its approval to the suggestions of the Interim Executive Committee that its main activity should be the holding of small Conferences to discuss clearly and rather narrowly defined problems to which a limited number of experts would be invited. In addition, careful consideration is being given to a project for the translation into English of important economic articles written in the less-accessible languages. Simultaneously with the Council Meeting a series of discussions was held on the subject of the Long-Term Problems of International Balance.

RECENT PERIODICALS AND NEW BOOKS.

Journal of the Royal Statistical Society (Series A.)

Vol. CXIII, Part II, 1950. *A Statistical Demand Function for Food in the U.S.A.:* J. Tobin. *Sampling for the Social Survey:* P. G. Gray and T. Corlett. *Output per Head in Different Parts of the United Kingdom:* C. E. V. Leser. *Scottish Farm Wages from 1870 to 1900:* R. Molland and G. Evans. *Table of the Hyperbolic Transformation* $\sinh^{-1}\sqrt{\chi}$*:* F. J. Anscombe. *United Kingdom Brewing Industry Statistics:* L. McMullen. *A Guide to Co-operative Statistics:* J. A. Hough.

Oxford Economic Papers (New Series).

Vol. II, No. 2, June 1950. *Some Aspects of Competition in Retail Trade:* P. W. S. Andrews. *The Equalizing Effects of the Death Duties:* G. Z. Fijalkowski-Bereday. *Productivity and the Business Man:* P. W. S. Andrews and Elizabeth Brunner. *The Course of Wage-Rates in Five Countries, 1860-1939:* E. H. Phelps Brown with Sheila V. Hopkins.

The Political Quarterly.

Vol. XXI, No. 3, July–September 1950. *The Experimental Roosevelt:* R. G. Tugwell. *The Future of the B.B.C.:* J. Coatman. *The Cold War in America:* D. C. Williams. *Conscription: a defence:* W. Wyatt. *Professor Laski and Political Science:* R. H. Soltau.

Vol. XXI, No. 4, October–December 1950. *Stalinism:* G. L. Arnold. *Agricultural Policy:* M. G. Kendall. *Korea, Formosa and World Peace:* Dorothy Woodman. *Italy's Foreign Policy:* M. Edelman. *The Outlook for British Films:* J. C. Gray. *The Career of Mackenzie King:* J. A. Stevenson.

International Affairs.

Vol. XXVI, No. 3, July 1950. *Race Relations in the Commonwealth:* H. V. Hodson. *Asia's Food Problems and their Impact on the Western Countries:* Sir E. John Russell. *Japanese Uncertainties:* R. Guillain. *Belgium: a survey of recent events:* Baron van der Bruggen. *The African as a Producer:* G. E. Lavin. *The Chinese in Borneo 1942–1946:* T. Harrison. *The International Socialist Conference 1946–1950:* D. Healey.

Vol. XXVI, No. 4, October 1950. *A Turning-Point in the Cold War?:* A. Toynbee. *Hydrogen Bombs: the need for a policy:* Sir George Thomson. *An American looks at Europe:* H. K. Smith. *British Foreign Policy since 1945:* C. Mayhew. *From the French Empire to the French Union:* C. A. Julien. *The Peasantry of South East Asia:* R. Firth. *International Collaboration in Health:* M. Mackenzie. *War Crime Trials: lessons for the future:* F. Honig.

Population Studies.

Vol. IV, No. 1, June 1950. *The Future Growth of the Population of South Africa and its Probable Age Distribution:* L. T. Badenhorst. *The Growth of Canadian Population:* N. Keyfitz. *A Note on Mortality in Jamaica:* G. W. Roberts. *Development of Birth Registration and Birth Statistics in the United States:* S. Shapiro. *The Sample Census of Population in Poland, 1949:* S. Szulc. *Marital Status and Family Size among Matriculated Persons in Sweden:* S. Moberg.

The Sociological Review.

Vol. XLII, Section 6, 1950. *The Concept of Myth:* D. H. Monro.

Accounting Research.

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Vol. XIII, No. 1, 1950. *Entwurf einer Theorie der dominierenden Wirtschaft* : F. Perroux. *Die Grundgesetze der Nachfrage und Preisbildung* : L. Trönle. *Der Kapitalzins in der Wirtschaftsrechnung* : L. Illy. *Die alteuropäische " Okonomik "* : O. Brunner.

Monatsberichte des Österreichischen Institutes für Wirtschaftsforschung.

Vol. XXIII, No. 8, August 1950. *Die Konjunkturlage. Österreichische Wirtschaftszahlen.*

Supplement No. 12. *Ertragssteigerung der österreichischen Landwirtschaft durch intensivere Verwendung von Handelsdünger.*

Sonderheft. No. 7. *Gesamtschau der österreichischen Wirtschaft in den Jahren 1948 und 1949. Versuch einer volkswirtschaftlichen Bilanz.*

Schweizerische Zeitschrift für Volkswirtschaft und Statistik.

Vol. 86, No. 4, August 1950. *La situation actuelle de l'entrepreneur privé* : J. Golay. *Mathematik und Statistik im Dienste der eidgenössischen Alters- und Hinterlassenenversicherung* : W. Wegmüller. *Empirische Konsum- und Sparfunktionen (Schluss)* : C. la Roche.

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Bulletin No. 2, 1950. *Les finances publiques de la Suisse.*

Giornale degli Economisti e Annali di Economia.

VOL. IX, NOS. 5–6, MAY–JUNE 1950. *Sulle funzioni quasi-periodiche nell'economia in sviluppo:* G. DEMARIA. *Prospettive e problemi della produzione degli idrocarburi in Italia:* M. BOLDRINI. *Semplificazione di alcuni procedimenti minimizzanti che concernono l'economia dei trasporti:* L. GALVANI. *L'inserimento della "Nuova" nella "Vecchia" Economia:* A. GAMBINO. *Indici di concentrazione:* F. GIACCARDI. *Disoccupazione e piena occupazione:* G. F. VELLA. *La distribuzione del reddito e sussidi assistenziali ai poveri dell'Irpinia nel 1943:* L. VARDARO.

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VOL. III, NO. 2, MAY 1950. *Some of the Causes of International Economic Disequilibriums and some Remedies:* U. PAPI. *Kapitalexport und Vollbeschäftigung:* E. PREISER. *Exchange Equilibrium:* JOAN ROBINSON. *Les barrières à l'immigration:* W. RÖPKE. *Échanges internationaux et rigidités structurelles nationales:* A. SAUVY. *An Index Measuring the Degree of Reciprocity in International Trade Relations:* L. SOMMER. *La multilatéralisation progressive des devises en Europe:* R. TRIFFIN.

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NO. 2, 1950. *La misura della produzione:* L. LENTI. *Sull'invarianza della forma della distribuzione dei redditi:* F. BRAMBILLA. *Costo di produzione e regime fiscale:* C. COSCIANI. *L'importanza del complesso prezzi-salari per una politica di massima occupazione:* J. M. CLARK.

Critica Economica.

NO. 2, 1950. *Gli accordi per i pagamenti intraeuropei:* R. TREMELLONI. *Liberalizzazioni, fluttuazione ciclica e credito:* G. DELLA PORTA.

Review of the Economic Conditions in Italy (Banco di Roma).

VOL. IV, NO. 4, JULY 1950. *Effects of the War and Inflation on the Balance-Sheets of Italian Joint Stock Companies:* F. C. D'ANNA.

VOL. IV, NO. 5, SEPTEMBER 1950. *Two Contrasting Opinions regarding Italian Economic Policy:* C. BRESCIANI-TURRONI.

Banca Nazionale del Lavoro Quarterly Review.

APRIL–JUNE 1950. *Germany: an experiment in Planning by the "Free" Price Mechanism:* T. BALOGH. *Fiscal Policy and Italy's Economic Development:* S. STEVE. *The Economic Integration of Western Europe:* F. COPPOLA D'ANNA. *The Balance-Sheet of the Bank of Italy:* L. MAGNANI. *Contributions to the Understanding of Contemporary Economics:* F. CAFFÈ.

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JULY–AUGUST 1950. *Investments.*

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VOL. LII, NO. 2, JUNE 1950. *The Role of Uncertainty in Economic Planning:* HARALD DICKSON. A critical review of Dr. Shackle's recent book, *Expectation in Economics.* The author gives a short summary of his argument in English. Dr. Shackle's assumption that an entrepreneur can compare not only different surprises but also distances or differences between surprises is dubious. The idea that only the *focus-gain* and the *focus-loss* are relevant is used in a case where this is not applicable. In Chapter V, where Dr. Shackle suggests a method of taxation, the unrealistic conclusion of the argument leads one to suspect that there is something wrong with the assumption. Chapter VI of the book makes an interesting contribution to the theory of the bargaining process. *Greek Attempts at Post-war Monetary Rehabilitation:* D. DELIVANIS. This article, in English, reviews the monetary history of

Greece since 1944. *Public Authorities, Insurance Companies and Banks in Social Accounting :* INGVAR OHLSON. A discussion of the problems involved in assessing the activities of public authorities, banks and insurance companies for the purpose of social accounting.

Nationaløkonomisk Tidsskrift.

NOS. 3–4, 1950. *How Do the Banks React ? :* JØRGEN PEDERSEN and CARL ERIK SØRENSEN. A report and commentary on the answers to a questionnaire inquiry made by the authors. Answers were received from 135 of Denmark's 160 banks. The questions were as follows : (1) When you have surplus cash do you try and increase your advances by easing requirements ? (2) Would your advances have been greater if the higher reserve requirements had not been introduced in 1942 ? (3) Will you lend to new customers if it involves borrowing from the Central Bank ? (4) Do you think that the demand for loans will be affected by charges between 4 and 8% in the rate charged when the charges are uniform for all banks ? (5) How will you react to a fall in liquidity ? Many of the banks added remarks to their answers. The authors conclude that the banks play a passive role in determining the amount of advances, that increases in the rate of interest have but small effect until high rates are reached and that the banks are averse to becoming dependent on the Central Bank. *Modern Problems in Monetary and Exchange Policy :* ERLING PETERSEN. A discussion of problems arising in the post-war period from the two alternative economic policies : planning (as exemplified by Britain and Norway) and monetary measures (as exemplified by Belgium). *An Economics Thesis :* PROFESSORS WINDING, PEDERSEN and ZEUTHEN. The main points of their opposition is the public disputation of Hans Brems' "Some Problems of Monopolistic Competition." A revised version is to appear shortly as a Harvard Economic Study. *The University Economics Institute in Oslo :* SVEN DANØ. A description of the organisation and work of the Institute.

Okonomi og Politik.

VOL. 24, NO. 2, APRIL–JUNE 1950. *De tekniske og politiske betingelser for kollektiv sikkerhed :* E. GIRAUD. *Det internationale kontrolorgan for Ruhrområdet :* W. DIEBOLD. *Udviklingslinier i 1940'ernes nordiske samarbejde :* K. MØLLER.

Ekonomiska Samfundets Tidskrift.

VOL. III, NO. 2, 1950. *Byggnadsproduktionens ekonomiska mål :* O. GRIPPENBERG. *Några amerikanska arbetsmarknadsproblem :* C. E. KNOELLINGER. *Om strukturförändringar i det ekonomiska livet :* C. A. J. GADOLIN.

VOL. III, NO. 3, 1950. *Om uppgifterna för vår sågverkshistoria :* N. MEINANDER. *Om ojämnheterna mellan det s.k. första ersättningssystemet och ersättningslagstiftningen av år 1945 :* V. PROCOPÉ. *Förbrukningsundersökningarna—ett inlägg :* E. v. HOFSTEN.

Statistical Bulletin of Israel.

VOL. I, NO. 7, MAY–JUNE 1950.

Moneda y Crédito.

NO. 32, MARCH 1950. *La política de crédito francesa en 1948 :* A. VIÑUALES. *Régimen económico de los Montepios Laborales :* J. P. LEÑERO. *Estudios sobre la renta nacional :* J. M. NAHARRO. *Nota sobre la distribución del capital nominal de las sociedades anónimas españoles :* F. G. QUIJANO.

El Trimestre Económico.

VOL. XVII, NO. 2, APRIL–JUNE 1950. *Tres ensayos estadísticos de interés práctico :* H. MAX. *Evolución de la economía cubana en la postguerra :* J. ALIENES Y UROSA. *¿Desarrollo económico sin inflación ? :* G. M. ALTEER. *Comercio e inversión en países poco desarrollados :* H. W.

Singer. *Hacia una nueva acción económica en América Latina :* V. R. Esteves. *La economia dinámica de Harrod :* I. M. de Navarrete.

Revista de Ciencias Económicas.

Vol. XXXVIII, Series III, No. 22. *El desarrollo económico de la América Latina y algunos de sus principales problemas :* R. Prebisch. *Re-ordenamiento monetario y comercio internacional (Aspectos contemporaneos) :* L. P. Frescura.

Boletin de Estudios Económicos.

No. 20, May 1950. *El accionariado obrero es solución ? :* S. Mantilla. *Significado y Contenido de la Contabilidad :* D. Pablo and D. H. S. Bullón. *Analisis de la Competencia en la economia neoclasica :* J. A. Arrasate. *Economia Financiera de los Valores mobiliarios :* J. L. de Urquijo. *Estudio de Lotes Mediante Inspección de Muestras :* E. Chacón.

Obzor Narodohospodářský (Czech text).

No. 9, May 1950. *Investment :* K. Karásek. *Capital Replacement in a Socialist Economy :* M. S. *The Financial Aspects of Industrial Investment :* D. Koutník. *Investment Planning and Statistics :* J. Okrouhlý. The issue contains also short notes on current international and domestic problems of economic and political interest.

Statisztikai Szemle (Hungarian text).

January–February 1950. *The Methodology of Statistical Grouping :* N. Grachev. *Preliminary Results of the Inquiry into Household Budgets :* J. Zala. *Reorganisation of Local Statistical Services : the work of the Leningrad bureau of statistics :* N. Puzakov. *Socialist Statistics and Bourgeois Pseudo-science :* E. Rédei. *Data on the Occupants and Invalid Movements in Hungarian Hospitals :* G. Somogyi. *Some Questions on Bringing Industrial Reserves into Use :* L. Volodarskiy and A. Yezhov. *The December 1949 Census of Co-operative Production :* A. Köszegi. *The Struggle for Above Plan Accumulation, the Profitability of Enterprises and Tasks of the State Statistical Service :* A. Petrov and L. Skvortsov. *Administration and Population :* J. Kovacsics.

March–April 1950. *The Struggle against Bureaucracy in Statistics. Decree of the National Economic Committee on Industrial Statistics. An Enquiry into Present Day Questions of Industrial Statistics. Lenin and Official Statistics :* P. Popov. *Stalin and Statistical Science :* V. Nemchinov. *Stalin, the Founder of Socialist Statistical Theory :* M. Biji and V. Trebich. *Salient Indices of Commercial Statistics :* J. Zala. *What do World Industrial Statistics Reveal ? :* A. Kaskarov. *Hungarian Book Production in 1949 :* G. Tolnai. *The Task of Statistics in Material Supply :* M. Eidelman. *A Study of Certain Problems in the Measurement of Production.*

May 1950. *Value of Production in Industry. Reserves for Lowering the Costs of Industrial Production :* A. Zverev. *The Rudiments of Socialist Statistics and Their Tuition in the Universities. Bureaucracy in Statistics. The Law of Large Numbers and Sampling Technique :* S. Ostrumov. *Statistics and Working Accounts. "Royal" Statistics* (a criticism of an article by Sir William Elderton in the *Journal of the Royal Statistical Society*, Series A, 1949).

Probleme Economice (Rumanian text).

No. 5, May 1950. *Reserves for Lowering the Costs of Industrial Production :* A. Zverev. *The Reduction of Cost Prices as an Instrument in the Struggle to Build Socialism :* C. Dascălu. *Planned Reduction of Circulating Capital in Soviet Trade :* Ş. R. Rădulescu. *The Role of Machine and Tractor Stations in the Socialist Transformation of Agriculture :* N. Trandafirescu and C. Topor. *The Progressive and Patriotic Character of Russian Mercantilist Thought in the 17th and 18th Centuries :* M. Oprişan.

NO. 6, JUNE 1950. *Two Years after the Revolutionary Act of Nationalisation :* C. STOICA. *The Success of Collectivisation : a means for the strengthening of the worker-peasant alliance :* C. SANDU. *The New Period of Planning Production Costs and Turnover Expenditure on Commodities :* C. NICULCEANU and I. STERNLIEB. *Stalin, the Theoretician and Organiser of the Socialist Disposition of Productive Forces :* V. VASIUTIN. *Concerning False Bourgeois Theories on the National Income :* G. ŞICLOVAN. *Yugoslavia in the Hands of the Anglo-American Monopolists :* G. CHIRICI.

NO. 6, JULY 1950. *The Rôle and Tasks of Artisan Cooperatives :* V. LUCA. *The Soviet Decisions on the Coordination of Scientific Work in the Economic Field. Towards the Application of the Government Decrees on the Organisation of Planned Prices :* M. MAIEVSCHI. *The Reduction of Cost Prices, the Task of the Leading State Agricultural Enterprises :* V. TOPOR. *Israel, a State Submissive to Colonial Exploitation and a Strategic Base for the Anglo-American Imperialists :* I. ARUNCUTÊANU.

NO. 8, AUGUST 1950. *The Fraternal and Permanent Help of the Soviet Union—Liberator of our Country—the Decisive Factor in the Work of Building Socialism in the Rumanian People's Republic :* P. BĂLĂCEANU. *The Gigantic Economic Power of the U.S.S.R. in the Service of Peace :* I. VIDRAŞCU. *J. V. Stalin and Socialist Railway Transport :* T. S. HACIATUROV. *The Raising of Labour Productivity—the Central Task in the Struggle for the Construction of Socialism :* M. MĂNESCU. *For the Full Utilisation of Productive Capacity in the Timber Industry :* N. CELAC. *The Economic Contract—an Important Factor in the Fulfilment of the State Plan :* C. MAIOREANU.

Voprosy Ekonomiki (*Russian text*).

NO. 4, 1950. *The Leninist Programme for Organising Socialist Construction :* G. EVSTAFYEV. *Lenin's Exposure of Bourgeois Economic Science :* M. RUBINSTEIN. *Methods of Planning Progressive Norms in Industry :* L. TOMASHPOLSKY. *The Decline of British Imperialism :* E. VARGA.

NO. 5, 1950. *The Economic Victory of the U.S.S.R. in the War :* P. BYELOV. *Lenin's Development of the Theory of Capitalist Overproduction in the Struggle with the Liberal Populists :* I. MRACHKOVSKAYA. *The Leading Role of the MTS in Agricultural Development on Collective Farms :* V. VENZHER. *The Struggle of the Democratic Camp for Peace :* A. SCHNEERSON. *The Upsurge of the Peasant Movement in Italy :* P. LISOVSKY.

NO. 6, 1950. *The Permanent Production Brigade in Collective Farms—the Basis for Organising Artel Labour :* V. ABRAMOV. *Methods for Improving the Use of Basic Means of Production in an Industrial Undertaking (the Experience of the Moscow " Kalibr " Factory) :* G. SHIFRIN. *Regional Differences in the Productivity of Labour and Costs of Production in Soviet Industry :* P. LIVSHITZ. *A. G. Tsulukidze's Economic Works :* G. MERGELISHVILI. *Consolidation of Monetary Circulation and Finance in the People's Democracies in Europe :* B. BOLDYREV. *Inflation in the U.S.A. :* Z. ATLAS. *The Extortionate Measures of Capitalist Industrialisation :* N. RYABOV.

Planovoe Khoziaistvo (*Russian text*).

NO. 3, 1950. *Technical Progress in the National Economy of the U.S.S.R. :* N. SOKOLOV. *Reduction of Building Costs : the most important problem of the national economy :* V. BURGMAN. *Future Tasks for the Soviet Oil Industry :* N. BAIBAKOV. *Mechanisation of the Manufacturing Processes of Building Materials :* P. DOROFEYEV. *Experience Gained from the Voronezh Oblast Plan :* G. ZIMIN. *The Path of Socialist Agrarian Reform in the People's Democracies of Europe :* A. PETRUSHOV.

NO. 4, 1950. *The State Budget in the Final Year of the Post-War Five Year Plan :* A. ZVEREV. *Standardisation and Unification in Heavy Machine Building :* M. KUNDIN and P. NAVMENKO. *The Organisation* *of Labour and Wages in Collective Farms :* K. Obolensky. *Bourgeois Economics—a Weapon of the Warmongers :* L. Alter.

Gospodarka Planowa (Polish text).

No. 3, March 1950. *The Proposed Law on the National Economic Plan for 1950. Extracts from the Decree of the Council of Ministers of 3rd March on the 1950 Plan. The Credit Plan in the Financial System :* M. Kucharski. *The Definition of Productive Capacity in Industrial Enterprises :* M. Rakowski. *The State Clothing Industry in the Six Year Plan :* J. Bolkowski. *Production Costs in Forestry :* E. Więcko. *The Planning of the Fulfilment of the Foreign Trade Turnover :* J. Krynicki. *The Rise in the Standard of Living as a Result of the Development of the Soviet Economy :* J. Malinowski. *From Soviet Economic Experience : for the Full Use of Reserves and Non-perishable Goods.*

No. 4–5, April–May 1950. *The Communiqué of the State Economic Planning Commission. The 1950 Plan in Industry :* A. Pawłowski. *Under Capacity Planning and Means to Suppress it :* M. Rakowski. *Some Problems on the Development of the State Retail Trade :* S. Surzycki. *Improving the Planning of Freight Transport :* S. Mroczek. *Nationalised Building Enterprises in Poland :* M. Rojowski. *The Potential Development in the Organisation of Building Enterprises :* K. Tyszka. *The Bases of the Economy of the Chinese People's Republic :* A. Kaduszkiewicz. *From Soviet Economic Experience : Reserves for Lowering Costs of Industrial Production :* A. Zverev.

No. 6, June 1950. *The Essence and Aims of the Budget :* L. Serafinowicz. *New Norms in Building :* S. Michotek. *Problems of Planning in Forestry :* R. Fromer. *Questions of Telecommunications Development :* W. Fijalkowski. *The Operating Plan for Water Transport :* J. Paszkowicz. *The Development of Towns and Municipal Economy in the U.S.S.R. :* M. Gajewski. *From Soviet Economic Experience : Functions and Significance of Soviet finances :* V. Diachenko. *For the Full Discovery and Use of Productive Capacity in Industry :* V. Alfeev and A. Korotkov.

No. 7, July 1950. *Communiqué of the State Planning Commission. The National Economy in the Six Year Perspective :* J. Marzec. *Changes in the Methods of Planning Investment :* K. Secomski. *Local Planning at a New Stage of Development :* J. Zaremba. *The Organisation of Enterprises in Key Industries :* M. Doroszewicz. *Emulation in the Czechowice Match Factories :* J. Kordaszewski. *The Rise in the Purchasing Power of the Rouble :* Z. Atlas. *Soviet Agriculture in the Postwar Stalin Five Year Plan :* J. Matysiewicz.

Pari I Kredit (Monnaie et Credit) (Bulgarian text, French and Russian summaries).

No. 5, 1950. *Stalin, the Great Protector and Friend of the Bulgarian People. New Socialist Measures in the Banking System :* I. Paliisky. *The Nature and Importance of Documentation in Accounts :* G. Dimitrov. *Application of the Manner of Determining the Limit of Capital Investment in the National Economic Plan :* C. Popov.

Bank of Tokyo (Quarterly Survey).

Vol. 3, March 1950. *The Pound Devaluation and Japan's Export Industry. U.S. Aid Counterpart Fund. One Year under the "Dodge Line" Stabilization Plan.*

NEW BOOKS.

British.

The African Factory Worker. A sample study of the life and labour of the urban African worker by the Department of Economics, University of Natal. Cape Town and London: Oxford University Press, 1950. 8½″. Pp. 221. 30*s*.

[To be reviewed.]

AMERICAN ECONOMIC ASSOCIATION. Readings in Business Cycle Theory. London: Allen & Unwin, 1950. 8½″. Pp. xvi + 494. 25*s*.

[It is very useful to have available now in an English edition this volume of Readings which was first published in America in 1944 and was noted in this JOURNAL in the issue of April 1945. It contains many articles which it is of great convenience to have readily accessible in this form. Nevertheless, as the Note then published suggested, it has certain serious *lacunæ*, in the sense that important English articles are missing from it. It would be interesting and useful to see it supplemented by a further volume drawn from a wider range of sources.]

BAREAU (P.). The Sterling Area: what it is and how it works. 2nd. edition. London: Longmans, Green, 1950. 8½″. Pp. 20. 1*s*. 6*d*.

[This useful short account of the working of the Sterling Area has been revised, enlarged and brought up-to-date.]

BELL (J. D. M.). The Strength of Trade Unionism in Scotland. University of Glasgow: Department of Social and Economic Research, 1950. 9½″. Pp. 48. 5*s*.

[The author seeks to discover the total number of trade unionists in Scotland, their industrial and geographical distribution and to compare the results with those for the United Kingdom as a whole. Measured either by the number of trade unionists per 100 of population or by the number per 100 insured employees the figures do not differ significantly from those of the United Kingdom as a whole. Thus his most interesting results are concerned with the regional and industrial distribution.]

BLOOMFIELD (A. I.). Capital Imports and the American Balance of Payments, 1934–39. A study in abnormal international capital transfers. London: Cambridge University Press, 1950 9″. Pp. xiii + 340. 45*s*.

[To be reviewed.]

BOH (LIM TAY). The Co-operative Movement in Malaya. London: Cambridge University Press, 1950. 8½″. Pp. 37. 1*s*. 6*d*.

[A popular account of the Malayan Co-operative Movement by a Lecturer in Economics in the University of Malaya.]

BRITISH TRAVEL AND HOLIDAYS ASSOCIATION. Twenty-Second Annual Report for the Year ended March 1950. London: British Travel and Holidays Association, 1950. 8½″. Pp. 39.

[This report throws much light on the United Kingdom's earnings from "Tourism." Of some 550,000 overseas visitors in 1949, just about one-quarter came from the U.S.A. and Canada. Of American visitors, 41% came by air; they spent on average just over £100, excluding fare payments, and nearly £200 including them; nearly half of them arrived in June, July and August; shortage of hotel accommodation is still an important limiting factor; even now only 50% of Americans travelling to Europe come to Britain; the level of the American tourist movement to Europe is still below the 1929 level.]

Clarke (C. E.). Social Insurance in Britain. London: Cambridge University Press, 1950. 8½″. Pp. x + 136. 13*s*. 6*d*.

[To be reviewed.]

Cole (G. D. H.). Essays in Social Theory. London: Macmillan, 1950. 8½″. Pp. 251. 15*s*.

[To be reviewed.]

Cook (R. S.). Costs and Returns from Milk Production in the Southern Province in 1948–49. Reading University: Department of Agricultural Economics, 1950. 10½″. Pp. 26. 2*s*.

[A roneo-ed analysis of the costs of producing milk on sixty farms in the "southern province" of England. Net costs varied from over 28*d*. in two herds to under 16*d*. in the five lowest cost herds, with an average of 21·4*d*.]

Crew (A.). (Enlarged and rewritten by Leo T. Little.) Economics for Commercial Students and Business Men. Thirteenth edition. London: Jordan & Sons, 1950. 7″. Pp. viii + 591. 12*s*. 6*d*.

[To be reviewed.]

Dover (V.). General Average and the York–Antwerp Rules, 1950, including their application to Marine Insurance. London: Stone & Cox, 1950. 7½″. Pp. 127. 12*s*. 6*d*.

[The principle of general average "springs from a rule of law applicable to all who chance to have interests on board a ship at sea exposed to some common danger threatening the whole. . . . In time of peril, there would undoubtedly have been disputes as to what property should first be disposed of until a time arose when the idea presented itself that it would be reasonable and just that any loss sustained in time of peril for the common safety should be borne equitably by all the parties interested in the common adventure in proportion to their respective shares therein." The applications of the principles have, however, been gradually evolved over a very long period. A revision of the principles was made during 1950, and this small book sets out in simplified form the present principles of average adjustment.]

Eucken (W.). The Foundations of Economics. History and theory in the analysis of economic reality. Translated by T. W. Hutchison. London: William Hodge, 1950. 8½″. Pp. 358. 21*s*.

[To be reviewed.]

Gambling, an ethical discussion. A Report of the Social and Industrial Commission of the Church Assembly. London: Church Information Board, 1950. 8½″. Pp. 69. 3*s*.

[This report, which has at present only the authority of the Social and Industrial Commission of the Church Assembly which produced it, finds that "the gambling contract is itself a permissible contract, that is to say, one into which a man may enter without necessarily committing sin." That does not imply that all forms of gambling are permissible or harmless. It is held that no Stock Exchange transaction falls within the definition of gambling adopted in the report. The report finds less objection to betting on the course than to betting off the course. It favours the prohibition or reduction in the scale of football pools and the prohibition of gambling machines.]

Grant (M.). Roman Anniversary Issues. London: Cambridge University Press, 1950. 8½″. Pp. xxiv + 204. 21*s*.

[The purpose of this study "is to show that a large number of Roman imperial coins and medallions owe their types, wholly or in part, to coincidences in date with important 'anniversary years.' These coincidences are either deliberately arranged or are accidental coincidences of which advantage is taken for purposes of propaganda." Prof. Grant begins by describing the forms of celebration of such anniversaries and then goes on to illustrate his thesis from actual coinages and to identify the issues commemorating various occasions.]

• **Hadfield (C.).** British Canals. London: Phoenix House, 1950. 8½″. Pp. 259. 16*s*.

[To be reviewed.]

Hancock (W. K.). Wealth of Colonies. London: Cambridge University Press, 1950. 7½″. Pp. 81. 7*s*. 6*d*.

[To be reviewed.]

Heyworth (Sir Geoffrey). Productivity. London: Lever Bros., 1950. 8″. Pp. 18. Privately circulated.

[This is a reprint of a speech delivered by Sir Geoffrey Heyworth, the Chairman of Lever Brothers and Unilever to the Annual General Meeting of his company in London. He dealt in considerable detail with the methods by which his company has succeeded in raising productivity and gave numerous illustrations of the savings that were found practicable. He discusses the opportunities under three heads: lay-out and equipment; organisation of work; human relations. It is only if all three are successfully pursued that the best results can be attained. Examples are given in which factories, after the application both of production study and incentives, increased their output by 80% to 150%.]

Industrial Australia. A study of recent expansion. Melbourne and London: Union Bank of Australia, 1950. 8½″. Pp. viii + 78.

[A revised and enlarged edition of a useful pamphlet noted in the Economic Journal of December 1949. It is designed to set out, for the benefit of anyone who may be considering the establishment of a branch in Australia, the necessary background information about Australian resources, conditions and markets.]

Jenkins (R.), Albu (A.), Digby (Margaret) and Whyte (Anne). Post-War Italy. A report on economic conditions by four observers. London: Fabian Publications and Victor Gollancz, 1950. 8½″. Pp. 49. 2*s*. 6*d*.

[An extremely interesting report by the four members of a Fabian delegation which visited Italy in the autumn of 1949 at the invitation of the Italian Government. Mr. Roy Jenkins, M.P., writes about *The Italian Economy* in general terms, and gives a fair and unbiased account of the deflationary measures imposed in 1947 to improve confidence in the lira and to strengthen the balance of payments. But after giving full credit to the efficacy of these measures he comes back to the central problem of low production, low investment, high unemployment and low effective demand. He concludes "there is, therefore, little indication at present that Italy is moving towards a solution of her central problem of underinvestment. Until such a solution is achieved, Italy will not be making full use of the breathing space which is provided by Marshall Aid. This assistance is stabilising the political situation and greatly strengthening the technical position of the currency, but it is being allowed to do comparatively little to strengthen the real basis of the Italian economy." In subsequent sections Mr. Austen Albu, M.P., writes about *The Organisation of Industry*, Margaret Digby writes about *Italian Agriculture* and Anne Whyte contributes notes on *The Standard of Living*.]

Lindsay (P.) and Groves (R.). The Peasants' Revolt 1381. London: Hutchinson, 1950. 9″. Pp. 184. 18*s*.

[To be reviewed.]

Masters (D. C.). The Winnipeg General Strike. University of Toronto Press (London: Geoffrey Cumberlege), 1950. 9″. Pp. xv + 159. 26*s*.

[An account of the General Strike which took place in Winnipeg in 1919–20. It was largely a test of strength between the One Big Union which had just been established and the Trades and Labor Congress, which was dominated by the Eastern Trade Union. This volume is one of a series dealing with the historical background of the Social Credit movement in Alberta, and it sets the General Strike in a larger perspective of Canadian political and industrial development.]

A Memorandum on the Town and Country Planning Act, 1947. London: Chartered Auctioneers' and Estate Agents' Institute, 1950. 8½". Pp. 10.

[This carefully argued and responsible pamphlet reaches the conclusion that the provision of the Town and Country Planning Act are so complex and unworkable that Parts V, VI and VII of the Act, which deal with the compensation–betterment problem, should be repealed. In place of these Parts, the Institute would wish to see a system under which no compensation is payable in respect of planning restrictions, but the owner should be entitled, in case of such restriction, to require the local authority to purchase at the market value.]

NATIONAL INSTITUTE OF ECONOMIC AND SOCIAL RESEARCH. Register of Research in the Social Sciences in Progress and in Plan and Directory of Research Institutions. London: Cambridge University Press, 1950. 9½". Pp. 174. 15*s.*

[This now well-known register of current research in the social sciences is classified under broad heads of subject matter. A subject index facilitates the discovery of research in any field. An index of names enables the work of a particular person to be found. A directory of research institutions completes the available material. The total number of research projects in the whole field covered is now 1265. This excludes, however, the research by private persons as such, and of commercial, political and similar bodies. Nor can the register hope to include much of the university research of senior teachers where this is of a private character; it can print no more than is reported to it. But as a work of general reference it is now well-established.]

NEUMAN (A. M. DE). Consumers' Representation in the Public Sector of Industry. Cambridge: Students' Bookshop, 1950. 8½". Pp. 22. 3*s.*

[This short pamphlet surveys the different types of machinery for consumers' representation in the nationalised industries. The author records his impression that the councils and committees have as yet done very little constructive work. Most of them complain that consumers make little use of them. His fear is that they are too concerned with educating the consumer to appreciate the producer's difficulties, and too little with their real task of keeping producers alive to the difficulties of consumers.]

NICHOLSON (J. L.). Variations in Working Class Family Expenditure. University of Oxford: Institute of Statistics, 1950. 10". Pp. 60. 2*s.* 6*d.*

[A reprint of an article published in the *Journal of the Royal Statistical Society.*]

PICKSTOCK (F.). British Railways—the Human Problem. London: Fabian Publications and Victor Gollancz, 1950. 8½". Pp. 36. 2*s.*

[The author of this report argues that the present Regions of the railway organisation are too large to permit reasonably human relations between the management and the staff. More decentralisation is needed. While top-level consultation is satisfactory, at lower levels it is insufficient and ineffective. A system of promotion, in which merit as well as seniority is taken into account, is urgently needed. There should be more provision for training. In the Unions, education, research and publicity are inadequate. "They have not fully faced up to their responsibilities under nationalisation."]

TEW (B.). Wealth and Income. An analysis of the economic and financial systems of Australia and Great Britain. Melbourne University Press (Cambridge University Press), 1950. 8½". Pp. ix + 307. 21*s.*

[To be reviewed.]

THOMSON (D. F.). Economic Structure and the Ceremonial Exchange Cycle in Arnhem Land. Melbourne and London: Macmillan, 1949. 8½". Pp. 106. 12*s.* 6*d.*

[A preliminary account of one aspect of the culture of some tribes of the Northern Territory of Australia by an anthropologist who lived with the people of Arnhem Land for over four years. The author brings to light the existence of a widely-ramifying ceremonial exchange system remarkably similar to the Kula-cycle of South-East New Guinea first described in detail by Malinowski. The book should be of special interest to economists, exhibiting, as it does, a process of exchange that seems to defy analysis in terms of normal utility theory. Yet, given the ideology of these peoples, the whole system makes sense, and incidentally is by no means non-utilitarian, even though the familiar market-mechanism is lacking, and even though the making of gifts without explicit reference to ultimate requital is the main motivation of the circulation both of ceremonial and utility objects. The author also finds that the comparatively recent influence of Indonesian traders has, if anything, led to a proliferation of the cycle, imports from Malay and elsewhere penetrating farther inland than would have been the case under normal foreign trade motivation. It is to be hoped that Dr. Thomson will follow up this short but valuable study with a more detailed account of the whole culture of the area.]

Viner (J.). The Customs Union Issue. London: Stevens & Sons, 1950. 8½″. Pp. viii + 221. 20*s.*

[To be reviewed.]

Whyte (L. G.). Principles of Finance and Investment, 2 vols. London: Cambridge University Press, Vol. I, 1949, Vol. II, 1950. 8½″. Pp. x + 192 and vii + 176. 12*s.* 6*d.* each volume.

[To be reviewed.]

Wootton (**Barbara**). Testament for Social Science. An essay in the application of scientific method to human problems. London: Allen & Unwin, 1950. 8½″. Pp. vii + 197. 15*s.*

[To be reviewed.]

Workers' Control. Sydney: Fabian Society of New South Wales, 1950. 8″. Pp. 24. 1*s.*

[While this pamphlet is primarily concerned with Australian problems it draws heavily on British experience and discusses in terms of the English literature of the subject the place of workers' control in socialist thought, the objectives, the objections and the constructive possibilities.]

American.

Anderson (W. A.). Marriages and Families of University Graduates. Ithaca, New York: Cornell University Press (London: Geoffrey Cumberlege), 1950. 9″. Pp. xii + 51. 8*s.*

[This report is based on a study of the marriages and families of Cornell University graduates of 1919, 1920 and 1921. It is reasonable to assume that these classes represent completed families, so far as child-bearing goes. The results are based on a questionnaire returned by 82% of the 81% of the graduates whose addresses were known, and thus covering about two-thirds of the original graduates. It has been possible from the information secured to estimate the ratios of the college graduates marrying to those of the same sex in the general population, to analyse age at marriage, relative ages of spouses, numbers of children, intervals between them, the length of the child-bearing period and a great many other phenomena of interest.]

Ballester (J. H.). A Brief Comparison between the Ordinary Life Contracts of Ten Insurance Companies. New York: Graduate School of Business of Columbia University, 1950. 9″. Pp. 29.

[As its title indicates, this pamphlet examines the principal differences between the contracts of ten insurance companies. The differences are analysed under some sixteen heads, and it is explained where and why the differences appear and what they signify.]

Braun (K.). The Right to Organize and its Limits. A comparison of politics in the United States and selected European countries. Washington D.C.: Brookings Institution, 1950. 9″. Pp. xiii + 331. $3.00.

[To be reviewed.]

Carpenter (J. T.). Employers' Association and Collective Bargaining in New York City. Ithaca, New York: Cornell University Press (London: Geoffrey Cumberlege), 1950. 9″. Pp. xiii + 419. 36*s*.

[To be reviewed.]

Clemence (R. V.) and **Doody** (F. S.). The Schumpeterian System. Cambridge, Mass.: Addison-Wesley Press, 1950. 8½″. Pp. 117. $2.50.

[To be reviewed.]

Doody (F. S.), (Ed.). Readings in Labor Economics. Cambridge, Mass.: Addison-Wesley Press, 1950. 9″. Pp. viii + 481. $3·75.

[This volume of Readings produced by a photographic process from the original texts of articles, is designed to supplement American college courses in Labor. For that reason, the articles selected are almost exclusively from American journals and deal with the American applications of the various aspects of labor economics. Within these self-imposed limits of objective, the selection is good and useful. It covers the fields of organisation, incentives, forms of wage-payment, differentials, minimum wages, causes of strikes, collective bargaining, trade union wage policies, wage policy and business cycles, and social security.]

Eister (A. W.). The United States and the A.B.C. Powers 1889–1906. Dallas, Texas: Southern Methodist University Press, 1950. 9″. Pp. 92. $1.50.

[A study of the effects of the Spanish-American War on the diplomatic and economic relations of the U.S.A. with Argentina, Brazil and Chile.]

Hartley (R. W.) in collaboration with **Wolkind** (**Eleanor**). America's Capital Requirements. Estimates for 1946–1960. New York: Twentieth Century Fund, 1950. 11″. Pp. 244. $3.00.

[To be reviewed.]

Herring (**Harriet** L.). Passing of the Mill Village. Revolution in a Southern Institution. Chapel Hill: North Carolina Press (London: Geoffrey Cumberlege), 1950. 8″. Pp. vii + 137. 24*s*.

[The cotton-mill village, owned by the management, was an institution in the Southern States. It is now passing as mills sell their villages and workers are acquiring their own houses. This passing has all sorts of secondary effects on the character and local government of the villages and on local politics. This monograph shows why managements have been led to sell, and traces the changes in mill-village life due to sales.]

Kapp (K. W.). The Social Costs of Private Enterprise. Cambridge, Mass.: Harvard University Press (London: Geoffrey Cumberlege), 1950. 8″. Pp. xii + 287. 30*s*.

[To be reviewed.]

Kimball (M.). Corporate Finance, Principles and Practice. Ames, Iowa: Littlefield, Adams, 1949. 8″. Pp. viii + 305.

[This book provides a summary of methods of finance of firms in the U.S.A. It appears to be written for the student of commerce or business organisation rather than of economics, as the principles discussed are those of elementary accountancy not of economics. It is clearly written, but contains so much condensed matter that it cannot be described as readable.]

Kozmetsky (G.). Financial Reports of Labor Unions. Harvard University: Graduate School of Business Administration, 1950. 8″. Pp. xi + 280. $3.50.

[This monograph, by an Instructor in the Harvard Business School, throws light on the changing character of Union Reports. While most of them are at pains to set out accurately and scrupulously the receipts and disbursements, the author finds that the detail does not enable either members or the public to ascertain the cost of union activities or the exact nature of these activities.]

Major Problems of United States Foreign Policy, 1950–1951. Washington D.C.: Brookings Institution, 1950. 9″. Pp. xiii + 416. Cloth $3.00. Paper $1.50.

[To be reviewed.]

Miller (D. C.). Taxes, the Public Debt, and Transfers of Income. Urbana: University of Illinois Press, 1950. 10″. Pp. xi + 153. Cloth $3.00. Paper $2.00.

[To be reviewed.]

Mints (L. W.). Monetary Policy for a Competitive Society New York and London: McGraw-Hill, 1950. 9″. Pp. vii + 236. 25*s*. 6*d*.

[To be reviewed.]

Moulton (H. G.). The Dynamic Economy. A dialogue in pay form. Washington D.C.: Brookings Institution, 1950. 7½″. Pp. vii + 238. $2.00.

[This is a dialogue, in three acts, in which the characters describe and represent the forces which have led to the growth of productivity in the American economy. A Greek Chorus of anonymous farmers disputes with named characters through a series of scenes set in each decade from 1850. The latter include such as Cyrus McCormick, William Ogden, Andrew Carnegie, Graham Bell, Edison, Gompers, Sharman, F. W. Taylor, Henry Ford. The moral is pointed at the end by the teacher who acts, so to speak, as Chorus leader: "we have looked at American life a century ago with its bitterly hard work and its low plane of living, and we have asked with the economists of that day whether there was hope for the future. We have seen how over the century, our private enterprise system *has* succeeded in progressively raising the standards of living of the American people."]

Nelson (B. N.). The Idea of Usury. From Tribal Brotherhood to Universal Brotherhood. Princeton University Press, 1949 (London: Geoffrey Cumberlege, 1950). 8″. Pp. xxi + 258. 20*s*.

[To be reviewed.]

Nussbaum (A.). Money in the Law, National and International. A comparative study in the borderline of law and economics. Brooklyn: Foundation Press, 1950. 9½″. Pp. xxxii + 618. $8.00.

[To be reviewed].

Papers of the Michigan Academy of Science, Arts and Letters. Vol. XXXII (1946). Edited by E. S. McCartney and H. van der Schalie (1948. Pp. xiv + 522. 60*s*.) Vol. XXXIII (1947). Edited by E. S. McCartney and F. K. Sparrow (1949. Pp. x + 414. 60*s*.) Vol. XXXIV (1948). Edited by E. S. McCartney and F. K. Sparrow, (1950. Pp. xiii + 350. 55*s*.) Ann Arbor: University of Michigan Press (London: Geoffrey Cumberlege, 1950).

[Each of these three annual volumes contains one paper within the field of economics. In the 1946 volume is a paper by Samuel M. Levin entitled "Thoughts on Industrial Democracy." The 1947 volume includes a paper on "Japan's Foreign Trade—A Proposal," by Harry G. Brainard. That for 1948 prints a paper on "Long-run and Short-run Changes in Productivity and their Effects on Employment," by Daniel B. Suits. Among other papers, most of which are devoted to scientific subjects, are various papers on geography which touch on the field of economics.]

PLANNING PAMPHLETS. No. 71. *The Development of a Policy for Industrial Peace in Atomic Energy.* By D. B. Strauss. Pp. viii + 103. $1.00. No. 72. *A Framework for Long-Range Agricultural Policy.* By O. Heline and D. R. Kaldor. Pp. viii + 68. 50 cents. Washington D.C.: National Planning Association, 1950. 7½″.

[The first of these pamphlets deals with the problems of strikes and labour relations in atomic energy plants. After a strike threat at Oak Ridge, the President appointed a Commission to suggest the best methods of conducting labour relations in the atomic-energy industry. This pamphlet reprints the report and discusses it. The Commission did not recommend special legislation, but preferred more orthodox methods of collective bargaining. A Labor Relations Panel was appointed to take jurisdiction and to use its "full discretion in the use of all voluntary procedures to end the dispute by mutual agreement." The pamphlet records the results of the first operations of the Panel. The second pamphlet considers in general terms the methods of raising the incomes of people now in agriculture. The authors reject those methods which will increase agricultural incomes by transfer from the rest of the Community and do not regard export-dumping as an appropriate technique. Pricing policies should be directed to the efficient use of resources and not to the redistribution of income. Their positive proposals are almost wholly directed to the improvement of agricultural productivity.]

SELLERY (G. C.). The Renaissance, its nature and origins. Madison, Wisconsin: University of Wisconsin Press, 1950. 8″. Pp. 296. $3.75.

[A text, at the sixth form or first-year undergraduate level, which deals in lively fashion with all aspects of the renaissance. Six pages deal in rather summary fashion with the economic aspects, stressing particularly the influence of the Church on economic thought and practice.]

SELZNICK (P.). TVA and the Grass Roots. A study in the sociology of formal organization. Berkeley and Los Angeles: University of California Press (Cambridge University Press), 1950. 9″. Pp. ix + 274. 28*s*.

[To be reviewed.]

SONNE (H. C.). "Economics" as applied to Government Fiscal Policy and Debt Management. New York: Sanders Printing Corporation, 1950. 7½″. Pp. 29.

[The author, Mr. Christian Sonne, Chairman of the Board of Trustees of the National Planning Association, argues that it must be recognised "that there are certain periods of bad times when a deficit is not only permissible but helpful." If, however, deficit financing were to result in reckless spending, an annual balanced budget may be the lesser evil. If money is to be kept sound and tax rates are to be reasonable, debt must not increase too rapidly. That implies surpluses in good years. What is wanted is the right balance between practice and theory.]

TALBOT (P.), (Ed.). South Asia in the World Today. University of Chicago Press (Cambridge University Press), 1950. 9″. Pp. x + 254. 30*s*.

[To be reviewed.]

THOMPSON (V. A.). The Regulatory Process in OPA Rationing. New York: King's Crown Press, Columbia University (London: Geoffrey Cumberlege), 1950. 9″. Pp. xi + 466. 37*s*. 6*d*.

[To be reviewed.]

Indian.

Annual Market Review 1949. Bombay: Premchand Roychand, 1950. 9½″. Pp. 87.

[An account of market trends in all the different sectors of the Indian economy. It includes discussions of events in the money and foreign-exchange market, in raw materials, manufactured textiles and the precious metals, and has a series of useful statistical tables covering all these fields.]

DEY (H. L.). Policy of Protection in India. A retrospect. Poona: Gokhale Institute of Politics and Economics, 1950. 9½″. Pp. 25. 1*s*. 6*d*.

[A most interesting lecture on the actual procedures and workings of the Indian Tariff Board, first during the pre-war period, and later after its functions had been re-defined in 1945 and again in 1948.]

KARVE (D. G.). Public Administration in Democracy. Poona: Gokhale Institute of Politics and Economics, 1950. 9½″. Pp. 61. 3*s*.

[A very vigorous and lively discussion of modern administration as it works out in a democracy under the conditions of to-day. Prof. Karve has read widely and draws freely on recent British experience and writings. His essay deserves to be read not only in India but in all democratic countries.]

MEHTA (J. K.) and AGARWALA (S. N.). Public Finance, theory and practice. Allahabad: Kitab Mahal, 1949. 8½″. Pp. xiii + 704 + ix.

[To be reviewed.]

PODUVAL (R. N.). Recent Trends in India's Foreign Trade. Delhi: Premier Publishing Company, 1950. 7″. Pp. 83.

[Two lectures delivered at Madras University during February 1950. The first deals with the changing pattern and distribution of India's foreign trade. The second deals with the commodity balance of trade and the need to stimulate exports.]

French.

ALLAIS (M.). Abondance ou Misère. Paris: Librairie de Medicis, 1946. Pp. 132.

[M. Allais' theoretical work has received considerable attention abroad in recent years. Readers will welcome his views on current planning problems, but it is a pity that they should only become available to them four years after the events which they seek to interpret. M. Allais' general thesis is that the post-war problems in France overshadowed by inflation are soluble only if the stultifying effects of physical controls are got rid of. The alternative to controls and a debilitating inflation is the establishing of a competitive economy tempered by redistribution of wealth. To quote the words of the author, " the exigencies of life do not admit of a perfect solution, but an approach to a solution is afforded by the application of the competitive principle accompanied by an appropriate policy of redistribution, and this is infinitely preferable to the central planning solution. The advantages of the latter exist only in the imaginations of its protagonists and is to be condemned as much in practice as in theory " (p. 88). Although it has been pointed out that M. Jacques Rueff's *Épitre aux Dirigistes* resembles Meade's *Planning and the Price Mechanism*, *Abondance ou Misère* bears an even stronger resemblance. For the foreign reader the pungent style and clarity of expression should give much enjoyment.]

Institut National de la Statistique et des Études Économiques. L'Asie Soviétique. Paris: Presses Universitaires de France, 1949. 9½″. Pp. 232. 500 *frs*.

[The purpose of this study is to afford the reader material for the appraisal of the economic exploitation of Soviet Asia, particularly in recent years. The authors distinguish four areas, North Siberia, the Urals, East Siberia and Central Asia and consider their geographical features, supplies of natural resources and transport facilities in detail. Although, as would be expected, the study is hampered by lack of sufficient statistical information for the framing of historical comparisons, the authors appear to have combed all available sources and have presented a most interesting picture of Soviet economic expansion and of the economic relations between the Soviet and its Eastern neighbours. Some useful maps are included in a folder at the back of the volume.]

LAUFENBURGER (H.). Économie Financière en Trois Leçons. Paris: Recueil Sirey, 1950. 9″. Pp. 140.

[In these essays, Prof. Laufenburger maintains that it is necessary to shift the emphasis in the teaching of public finance away from the study of tax problems, which were considered in detail by the Italian School, towards the study of the effects of the growth of the positive intervention of the State in the economy via budgetary and monetary policy. This is quite in keeping with current thought in the Anglo-Saxon world, but the author attempts the impossible in trying to set out "en pleine lumière" the full implications of developed budgetary and financial techniques in three easy lessons. The second essay describes the extent of the growth of the public sector in a number of countries by reference to such factors as the growth in the number of Civil Servants, the growth in public income and expenditure, etc., and, on the whole, is precise and accurate, particularly in the sections on the redistribution of income. The third chapter, which considers monetary policy, is not so successful. The points made concerning the limitations of monetary policy in influencing the level of activity are familiar enough. It is somewhat disturbing to find that the only references to Keynes and Harrod in the discussion of inflation are to the "General Theory" and "Trade Cycle," both of whom have so skilfully analysed inflation in macro-economic terms in more recent times. In consequence, the author's discussion of savings and investment is best ignored. It is not essential to the author's argument, and it will only annoy the monetary theorist.]

MARCHAL (J.). Cours d'Économie Politique. Paris: Librairie de Medicis, 1950. Pp. 938.

[This massive volume provides a first-year course in economics in which special emphasis is laid upon the prescriptive nature of our study. The first part, some 300 pages, is a potted economic history interspersed with comments on contemporary "Dogmengeschichte" of a rather pedestrian nature. One chapter stands out from the rest. There is an unusually clear account of modern scientific method in economics in which reference is made to the use of analysis (including elementary difference equations). The distinction between theoretical, historical and "previsional" models is a neat one. It is a pity that this chapter is not used as the morphological foundation of this work. The book passes on to a straightforward account of price theory incorporating a useful synthesis of modern theories of imperfect competition and closing with a long-winded digression on the meaning of value in economics. In the Money and Banking section, it takes the writer a long time to make contact with the really interesting problems. When eventually problems of monetary expansion and contraction are dealt with, no general theory is advanced and the first-year student is left to take his pick of a bewildering number of individual theories. Two general criticisms might be advanced. No clear-cut account is given of the framework of the economic system—a necessary pre-requisite for the study of monetary theory. Lastly, the text is too elementary to provide the student with the necessary background for the impressive bibliography provided for him. For example, the discussion of monetary theory eventually reaches the Fisher equation, but from there the student is referred to Robertson's "Essays in Monetary Theory" and Myrdal's "Monetary Equilibrium," to name only the better known.]

WEILLER (J.). Problèmes d'Économie Internationale. Paris: Presses Universitaires de France, 1950. 9½″. Pp. 333. 800 *frs.*

[To be reviewed.]

Belgian.

JACQUEMYNS (G.). *La Société Belge sous l'Occupation Allemande* 1940–1944. Alimentation et état de santé. Pp. 538. Mode de vie. Comportement moral et social. Pp. 502. Les travailleurs deportés et leur famille. Pp. 143. Brussels: Nicholson & Watson, 1950. 9½″.

[To be reviewed.]

German.

Arnim (W. von). Strukturwandlungen und Nachkriegsprobleme der Wirtschaft Danemarks. Kiel: Institut für Weltwirtschaft, 1950. 8″. Pp. 65. DM 3.50.

[To be reviewed.]

Binder (R.). Die Belastung durch die persönliche Einkommensteuer in Deutschland, England und den Vereinigten Staaten. Kiel: Institut für Weltwitschaft, 1950. 8″. Pp. vii + 196. DM 15.

[The result of detailed statistical comparisons is to show that the general level of income taxation in Germany is about four times as much as in the U.S. and 50% above that in Great Britain. This result is obtained by comparing income levels at the official exchange rates. The complexities of international comparisons of tax burdens emerge clearly from this attempt.]

Carell (E.). Unternehmergewinn und Arbeitslohn. Munich: Richard Pflaum, 1950. 9½″. Pp. 174. DM 18.

[To be reviewed.]

Geck (L. H. A.). Sozialpolitische Aufgaben. Tübingen: Mohr, 1950. 9″. Pp. 62. DM 2.40.

[This booklet contains the text of two lectures given by the author at Bonn University. The first deals with the social importance of economic education, the second with that of personnel policy. The papers are preceded by a more general discussion of the tasks of social policy. The author is a well-known authority in his field, and displays wide historical and factual knowledge in discussing his subject.]

Heeckt (H.). Strukturwandlungen und Nachkriegsprobleme der Wirtschaft Norwegens. Kiel: Instituts für Weltwirtschaft, 1950. 8″. Pp. 48. DM 2.50.

[The study first describes the economic structure of Norway and then proceeds to a discussion of present economic policies and planning objectives. The "social accounts" for Norway are briefly but adequately described. A final chapter describes the special locational advantages and disadvantages of the country within a more integrated Western European system.]

Herlemann (H. H.). Die Versorgung der westdeutschen Landwirtschaft mit Mineraldünger. Kiel: Institut für Weltwirtschaft, 1950. 8″. Pp. 74. DM 4.

[This study represents the results of a report on the supply of fertilisers to agriculture in Western Germany, made to the Minister of Food at the request of the Bi-Zonal Economic Council. The report deals successively with requirements, production and sales conditions. It stresses the unsatisfied requirements (estimated at 70% above present consumption) and argues against a reduction of productive facilities under the dismantling programme. The need for farmers' education is also stressed.]

Hornschu (H. E.). Die Entwicklung des Finanzausgleichs im Deutschen Reich und in Preussen von 1919 bis 1944. Kiel: Institut für Weltwirtschaft, 1950. 8″. Pp. xiv + 198. DM 12.

[To be reviewed.]

Plate (R.). Der Weltgetreidemarkt nach dem zweiten Weltkrieg. Berlin: Paul Parey, 1950. 8″. Pp. 233.

[A statistical study of the position and outlook for production, trade and prices of the main grain products. After a detailed consideration of bullish and bearish price influences, the author concludes that the bearish influences will predominate and prices will gradually come down, more or less as envisaged by the International Wheat Agreement. No bad or sudden break in prices is expected.]

STELLING (ILSE). Die Sozialisierung des Kohlebergbaus in Grossbritannien. Kiel: Institut für Weltwirtschaft, 1950. 8″. Pp. vi + 71.

[This is a straightforward, purely descriptive account of the movement towards nationalisation of coal mining in Great Britain, from the days before the First World War to the present time. This being a topical subject at the present time in Germany, the book with its facts will no doubt be useful to German readers. To British readers it offers little, since there is no attempt at economic analysis or judgment. Such issues as proper pricing or investment policies for nationalised industries are avoided.]

STISSER (R.). Standort und Planung der deutschen Kraftfahrzeugindustrie. Bremen-Horn: Walter Dorn, 1950. 8″. Pp. 84. DM 4.

[This study of the localisation problems of motor-vehicle production in Western Germany arrives at the conclusion that the main demand for new investment in this industry will be in the production of tractors and motor cycles; that for both types of production the best form of organisation is a big plant in a large town; but that the production of components and accessories can be suitably decentralised. The inquiry proceeds from locational theory, as applied to the industry, to locational policy; and in this latter respect the author is inclined to favour the expansion of the industry in its present centres of production.]

WEBER (A.). Dogma und Wirklichkeitssinn in der Sowjetwirtschaft. Munich: Verlag der Bayerischen Akademie der Wissenschaften, 1950. 9″. Pp. 52. DM 3.50.

[To be reviewed.]

WEBER (A.). Weltwirtschaft. Berlin: Duncker & Humblot, 1950. 9″. Pp. xiii + 464. DM 15.

[To be reviewed.]

Die Weltwirtschaft mitte 1950. Kiel: Institut für Weltwirtschaft, 1950. 11½″. Pp. 91. DM 5.

[To be reviewed.]

Austrian.

WEBER (W.). Wirtschaftswissenschaft und Wirtschaftspolitik in Österreich. Vienna: Springer, 1949. 9½″. Pp. 85. 11*s*. 6*d*.

[This book represents a catalogue and classification of economists, public finance experts, statisticians and business economists who have taught in Austria. The story starts with early cameralism in the seventeenth century during the reign of Emperor Leopold I, and is thus by no means confined to the "Austrian School." The schools distinguished are the cameralists, classics (two pages only!), romantics, historians, normative school, the "Austrian School," and the modern "organics." The second part describes the influence of economic doctrines on economic policy, the activities of economists in policy and of politicians in economic science. The book is also addressed to students of economics, but is too much in the nature of a catalogue of names and titles to take the place of a real *Dogmengeschichte*.]

Swiss.

BACHMANN (H.). Westeuropäische Wirtschaftsunion oder wirtschaftliche Zusammenarbeit? Zurich and St. Gallen: Polygraphischer Verlag, 1950. 8″. Pp. viii + 48.

[To be reviewed.

Dutch.

EKKER (M. H.). Equilibrium of International Trade and International Monetary Compensations. The Hague: Central Planning Bureau, 1950. 9½″. Pp. 41.

[A reprint of an article that appeared in *Weltwirtschaftliches Archiv*, 1950, *Heft* 2. It represents an attempt to dissect a system of trade movements so as to show the equilibrium movement of the system. For this purpose the author distinguishes the bilateral equilibrium component, the circular equilibrium component, the flowing component and the net positions component.]

Export Promotion and the Drive for Dollars. The Netherlands benefit by Marshall Aid. Rotterdam: Rotterdamsche Bank, 1950. 10½″. Pp. 45.

[An account, in English, of the measures that the Netherlands have adopted to stimulate dollar exports. In 1947 Dutch exports were equivalent to only 44% of the imports; by the last quarter of 1949 they had reached 84%. To promote dollar exports 10% of the net export proceeds are at the free disposal of exporters. Various organisations, together with special trade Commissioners, have been created. Facilities are being developed for holding stocks in the United States. None the less, a final section emphasises the immense advantages which the Netherlands have derived from the existence of Marshall Aid.]

Italian.

COSCIANI (C.). Elementi di economia politica. Third, revised edition. Padua: Cedam, 1950. 9″. Pp. 370. 900 *l.*

[The third edition of a fairly elementary text-book; it is not stated when it was first published, nor to what extent it has been brought up to date.]

COSCIANI (C.) La riforma tributaria. Analisi critica del sistema tributario italiano. Florence: "La Nuova Italia," 1950. 7½″. Pp. 374. 1300 *l.*

[A critical description and analysis of the Italian system of taxation, which is offered as a preliminary to a general reform.]

INSOLERA (F.). Teorica dell'ammortamento. Turin: Einaudi, 1950. 9½″. Pp. 303. 2400 *l.*

[A mathematical treatise on the amortisation of capital. It contains a general discussion of the problems from the actuarial and financial points of view. Together with the *Theory of Capitalisation*, announced in this JOURNAL, March 1950, it completes the author's *Treatise of Actuarial Science.*]

STARK (W.). La storia dell'economica in relazione allo suiluppo sociale. Milan: L'Industria, 1950. 9½″. Pp. 82. 500 *l.*

[An Italian translation of the author's *History of Economics in its Relation to Social Development*, published in 1944 and reviewed in the December 1945 issue of the ECONOMIC JOURNAL.]

VINCI (F.). Istituzioni di Economica. Bologna: Cesare Zuffi, 1950. 10″. Pp. 370.

[To be reviewed.]

Danish.

BREMS (H.). Advertising, the Desire to Purchase and Purchasing Power. Copenhagen: Einar Harcks Forlag, 1950. Pp. 148.

[A theoretical analysis, in Danish, of advertising and the equilibrium of a single firm and an oligopolistic industry and a discussion of the effects of advertising on the level of employment.]

Spanish.

SARDA (J.). Una Introducción a la Economía. Barcelona: Bosch, 1950. 9″. Pp. 238. 60 *ptas.*

[This book is designed to make some of the more recent contributions to economic thought available to Spanish readers. It starts from the national resources of labour and capital and proceeds from them to the national income and the balance of payments. It goes on to trace the relations of public finance and budgetary policy to national income. Subsequent sections deal with the organisation of production, with consumer demand, competition, monopoly and imperfection competition. Next the rewards and supplies of factors are analysed. Finally, we come to the determination of the level of activity and income, monetary supplies and policies, the effects of liquidity preferences, and the problems of fluctuations and their avoidance. The author is Professor of Economics and Public Finances in the University of Barcelona.]

Egyptian.

CHALOM (G.). La Détermination Fiscale des Bénéfices Commerciaux et Industriels en Égypte et les Recours Contentieux. Cairo: S.O.P. Press, 1949. 10″. Pp. 165. P.T. 40.

[This work combines a detailed examination of the legal framework of the profits taxes imposed in Egypt since shortly before the Second World War with a discussion of the comparative effects of this type of taxation in both Egypt and France.]

Czechoslovakian.

ERBAN (E.). Budget of Peace and Social Progress. Prague: Orbis, 1950. 8″. Pp. 62.

[An account, in English, of the work of the Czech Ministry of Labour and Social Welfare.]

Work for all or Unemployment. Prague: Orbis, 1950. 8″. Pp. 126.

[This book seeks to contrast the ever-present spectre of unemployment in the Capitalist countries—suitably documented from some of the more critical articles of *The Economist* and *The New Statesman and Nation*—with "the liquidation of unemployment by peaceful methods," to be found in the U.S.S.R. and its satellites.]

Official.

BRITISH.

BRITISH TRANSPORT COMMISSION. Report and Accounts for 1949. London: H.M. Stationery Office, 1950. 9½″. Pp. viii + 408. 8*s.*

[This report, which covers the Calendar year 1949, describes the progress made in carrying out the various objectives of the Transport Act of 1947. Since capital investment had to be limited by general economic considerations, the progress could not be rapid, and has largely taken the form of acquisition of undertakings and preparations for their co-ordination and integration. There is a brief discussion of the charges scheme now under consideration and a fuller discussion of the financial problems of the Commission. The greater part of the report is given up to the activities of the various Executives, and to financial and operating statistics.]

COLONY OF TRINIDAD AND TOBAGO. Quarterly Economic Report, April–June 1950. Trinidad: Central Statistical Office, 1950. 11″. Pp. 32 and tables. 12 *cents.*

[This is the first of a new enlarged series of quarterly reports on the economic position of Trinidad and Tobago, which is planned on a generous and very informative scale. The introductory comments on the trend of the economy suggest that, while during the last quarter activity was higher and the balance of payments favourable, this was largely the consequence of a rise in the value of exports. There is some danger that import prices will tend to follow the rising trend of export prices, so that an adverse change in the terms of trade is likely and would produce serious difficulty. The most disturbing feature is the failure of crude oil production to expand. Unless new oil reserves can be found, the economy will have to depend increasingly on the sale of other products.]

Industrial Development in the British Territories of the Caribbean. Report prepared by the British member of the Industrial Survey Panel appointed by the Caribbean Commission. 3 vols. London: Colonial Office, 1950. 13″. Pp. 194, 264 and 198.

[To be reviewed.]

UNION OF SOUTH AFRICA. Fourth Annual Report of the Registrar of Banks for the Period ended 31st December 1949. Pretoria: Registrar of Banks and Building Societies, 1950. 13″. Pp. 36. 2*s.* 6*d.*

[This further Annual Report contains full statistical information about the assets and liabilities of the commercial and other banks of the Union of South Africa.]

AMERICAN.

Catalog of United States Census Publications 1790–1945. Prepared by H. J. Dubester. Washington D.C.: U.S. Department of Commerce, Bureau of the Census, 1950. 9″. Pp. 320.

[A hand-list of some 3600 publications issued from the Bureau of the Census between 1790 and 1945. It possesses a useful subject index which, together with the subdivision of the list into sections, makes it easy to find a list of publications dealing with any particular subject.]

Eighth Report to Congress of the Economic Co-operation Administration, for the quarter ended March 31, 1950. Washington D.C.: U.S. Government Printing Office, 1950. 9″. Pp. x + 137. 40 *cents.*

[This report, covering the first quarter of 1950, is a useful supplement to the larger E.C.E. reports produced in Geneva and the various reports which emanate from O.E.E.C. in Paris. It contains, apart from valuable comment, a large number of statistical tables covering not only the recovery of European production and the development of European exports, but also the uses of counterpart funds, the forms which aid has taken, the types of technical assistance and numerous other relevant facts about which information is not elsewhere readily accessible.]

The Midyear Economic Report of the President, transmitted to the Congress July 26, 1950. Washington D.C.: United States Government Printing Office, 1950. 9″. Pp. 160.

[This report emphasises the recovery from the recession of 1949. The rate of production of goods and services in the first half of 1950 was about 5% above the rate of mid-1949. Business investment had shown the largest increase among expenditures, being $10·6 billion or about 33% greater in the first half of 1950 than in the second half of 1949. This was mainly a switch from inventory liquidation to inventory accumulation. At the same time residential construction had risen by about 25%. Once again a foreign observer cannot but be impressed and surprised at the almost exclusively inward-looking character of this survey. There are no more than half a dozen pages about the economic effects of the United States relations with the outside world. It is, however, increasingly apparent that the closing of the dollar gap is coming much more from a decline of exports than an increase of imports. The post-devaluation dollar value of imports in the first half of 1950 was about 3% greater than in the first half of 1949, while the value of exports was about 25% less.]

INDIAN.

GOVERNMENT OF INDIA. MINISTRY OF COMMERCE. National Income of British India and the Union Provinces, 1945–46. 1949. Pp. 16. National Income of the Indian Union Provinces, 1946–47. 1950. Pp. 17. New Delhi: Government of India Press. 9½″.

[These estimates of the Indian national income for 1945–46 and 1946–47 are based on the concept of "net national income produced within India at factor cost." The presentation is laconic and no indication is given of the probable margins of error of particular items. The authors give up in despair, however, an attempt to include the former Indian States. The estimates would indicate an average income per head of Rs. 198 for British India and Rs. 204 for the Union Provinces, as they stood after partition, in 1945–46; the real income in 1946–47 was about the same, but a rise of some 12·5% in prices meant an income of about Rs. 228 per head for the Union Provinces in current prices.]

GOSWAMI (M. N.). A Survey of Rural Economic Conditions in Darrang. Shillong: Assam Government Press, 1950. 10½″. Pp. 58.

[A sample survey in a District of Assam.]

A Note on Balanced Cultivation. New Delhi: All-India Congress Committee, 1950. 9½″. Pp. 58. Re. 1/-.

[This report starts with various alternative assumptions regarding the caloric requirements per head of population and estimates the deficiencies of various foods and raw materials. It is estimated that, compared with the ideal levels of consumption set out, the overall deficit in food supplies will be of the order of 54% by 1951.]

Our Immediate Programme. New Delhi: All-India Congress Committee, 1950. 8½″. Pp. 99. Rs. 2.

[The report of a Planning Conference held in New Delhi during April 1950. It includes speeches by a number of Ministers. But the most important contents are the Resolutions of the Conference and the Immediate Economic Programme that was generally approved. The programme is in qualitative and desiderative terms, rather than in terms of an attempt to measure statistically the available resources and the competing claims upon them. The main emphasis is on growing more food and producing more of the essential raw materials and consumers' goods by means that will give productive employment to the unemployed and under-employed. But this must be reinforced by increased investment made possible " by mopping up surplus purchasing power in sectors least habituated to capital formation through a scheme of voluntary but nation-wide austerity," as well as by the removal of " restrictive unplanned and outmoded controls " and their replacement by others more appropriate to present needs.]

DUTCH.

LISMAN (J. H. C.). Econometrics, Statistics and Thermodynamics. The Hague: Netherlands Postal and Telecommunications Services, 1949. 9½″. Pp. 104.

[Dr. Lisman attempts to explain certain frequency distributions, in which the Dutch Post Office is interested: they include various kinds of financial transactions with the Postal Cheque and Transfer System and with the Post Office Savings Bank and of the number of telephone calls both of different length and made by different subscribers. He has sought another science, where actual frequency distributions have been satisfactorily explained by theory, and has chosen thermodynamics rather than the more suitable biological sciences. The introductory chapter discusses at length the role of analogy in scientific argument and follows this up with a similar treatment of entropy. Unfortunately, on p. 15, Dr. Lisman betrays that he has no very clear idea of what economists mean by a demand curve. There follows the most interesting section of the pamphlet in which various empirical frequency distributions are discussed and portrayed on logarithmic probability paper. The assertions about the precise nature of each distribution might be more readily believed if χ^2 had occasionally been used to test the goodness of fit of any assumed distribution. Next he attempts to draw an analogy between the kinetic theory of gases, and financial transactions. The analogy is not a plausible one, and appears to be little more than a somewhat uncritical effort to use results in physics to explain economic phenomena. Finally, there is an unilluminating discussion of the analogy between H. T. Davis's theory of Budgets (*The Theory of Econometrics*, pp. 170 *et seq.*) and thermodynamics. Having decided to identify entropy with utility, Dr. Lisman makes the astonishing discovery that in maximising utility *homo oeconomicus* obeys the second law of thermodynamics ! This sort of nonsense can do nothing to help those anxious to escape from the determinism of current mathematical economics to formulations where chance and frequency distributions play their proper part. Some time no doubt the Theory of Stochastic Processes, now being developed elsewhere, will be of use in economics; and now that Dr. Lisman's faith in analogy seems to have been shaken by his excursions into fantasy, perhaps his future work will be directed to hastening the arrival of that day.]

INTERNATIONAL.

Freedom of Association and Conditions of Work in Venezuela. Geneva : International Labour Office (London : Staples Press), 1950. 9½″. Pp. 185. 6*s*.

[The report of a Mission sent to Venezuela, at the request of its Government, by the International Labour Office.]

International Monetary Fund. Annual Report, April 30, 1950. Washington D.C. : International Monetary Fund, 1950. 9″. Pp. xi + 160.

[To be reviewed.]

ORGANISATION FOR EUROPEAN ECONOMIC CO-OPERATION. Report on Internal Financial Stability. Paris : O.E.E.C., 1950. 10″. Pp. 140.

[This survey deals, first in general terms and then in relation to each of the eighteen countries, with the inflationary and deflationary factors at work in Europe down to March 1950. In many respects increasing output and the elimination of bottlenecks have made the problems easier. On the other hand, the period under review covered the devaluations of 1949, substantial diminution of American aid and a continued high level of investment. In a majority of countries inflationary pressures, before the outbreak of war in Korea, had been brought fairly effectively under control. In Belgium, Germany and Italy prices were falling and unemployment was high, partly for structural reasons, but partly also for lack of effective demand. The Working Party that produced the report stresses the growing importance of maintaining internal stability if trade between the European countries is to be progressively liberated without repercussions. Deflation in one country, it is emphasised, may create difficulties for others by diminution in their exports. At the same time, consumption levels must take account of the progressive reduction of American aid.]

Tin 1949–1950. A review of the world tin industry. The Hague : International Tin Study Group, 1950. 10″. Pp. 55. 4*s*.

[This annual survey of the world tin position is based on statistical material collected by the International Tin Study Group. The year 1949–50 showed great changes. Free markets were re-introduced and government control almost disappeared. A sharp fall in consumption towards the end of 1949 and the steady increase of production led (temporarily as we now know) to a break of prices and the consideration of an intergovernmental commodity agreement.]

UNITED NATIONS. Annual Report of the Secretary-General on the Work of the Organization, 1 July 1949–30 June 1950. Lake Success: United Nations (London : H.M. Stationery Office), 1950. 11″. Pp. xiv + 43. 11*s*.

[One chapter of this report is devoted to economic and social questions. The economic section of the chapter deals, *inter alia*, with such questions as the plans for producing world economic surveys, the studies of economic stability and full employment, the development of under-developed areas, commodity problems and the activities of the regional Economic Commissions. The social problems include human rights, the status of women, planning of social development, population and migration, social welfare and narcotic drugs.]

UNITED NATIONS. Economic Survey of Asia and the Far East, 1949. Lake Success: United Nations (London: H.M. Stationery Office), 1950. 9″. Pp. xix + 485. 22*s*. 6*d*.

[To be reviewed.]

UNITED NATIONS. Implementation of Full Employment Policies. Report No. 1, Second Half of 1949. Lake Success: United Nations (London: H.M. Stationery Office), 1950. 9″. Pp. 52. 3*s*.

[This report begins by analysing the replies of twenty-one countries to the questions addressed to them by the Secretary-General. These included questions about measures to stimulate consumption, to encourage private investment, to increase public investment, to increase government expenditures, to increase net exports. The countries fall into five main groups: the first, which includes the United Kingdom, had virtually no unemployment; the second had significant, but relatively low, unemployment; the third, which in the second half of 1949 included the United States and Belgium, had unemployment which seemed to be of serious proportions; the fourth and fifth groups were undeveloped and non-self-governing territories. Some of the replies of certain countries are printed *in extenso*, including those of the United Kingdom and those made on behalf of our dependent territories.]

Proceedings of the United Nations Scientific Conference on the Conservation and Utilization of Resources. Vol. I. Plenary Meetings. United Nations: Dept. of Economic Affairs (London: H.M. Stationery Office), 1950. 11″. Pp. lxi + 431. 32*s*. 6*d*.

[The record of a Conference held at Lake Success during August and September 1949, at which some 700 scientists met to discuss and consider over 500 papers. The complete record will fill a total of eight volumes. This first volume includes a verbatim record of the plenary meetings and the papers discussed at them. The subjects were very varied. They included studies of the world resources in relation to population (Colin Clark contributing a paper), critical shortages (with a paper on food shortages by Sir Herbert Broadley), the interdependence of resources, soils and forests, fuels and energy, metals and minerals, resources creatable by applied technology, resource appraisal, techniques for less-developed countries, river-basin development and finally a symposium on future lines of study.]

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